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Comments and Responses on the Draft Environmental Impact Statement

Personal Watercraft Rulemaking

Glen Canyon

National Recreation Area
Arizona and Utah

2004-010795/NF

Volume 2

C

RESPONSES TO SUBSTANTIVE COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT

METHODOLOGY AND PURPOSE

BACKGROUND

The *Draft Environmental Impact Statement, Personal Watercraft Rule Making: Glen Canyon National Recreation Area, Arizona and Utah,* was released for public review in September 2002 (67 *Federal Register* [FR] 178). Its release initiated a formal 60-day public comment period that ended on November 26, 2002. The United States Department of the Interior, National Park Service (NPS) is the lead federal agency generating the environmental analysis.

The personal watercraft rule-making applies to management of personal watercraft in Glen Canyon National Recreation Area. The *Draft Environmental Impact Statement* described three alternatives that would protect the resources and values of the recreation area while offering recreational opportunities as provided for the area's enabling legislation, purpose, mission, and goals.

The National Park Service received 20,018 comment documents during the public comment period. Collectively, they contained 31,216 comments. Comments were received by letter, fax, and electronic mail; on comment forms collected at public meetings; as petitions; and in oral transcripts. Comment letters received included 19,975 from individuals, 13 from businesses, 18 from organizations (organization was identified in the letter), and 6 from public agencies. Of the comments received, 60% were form letters in 11 separate formats.

Respondents were very interested in the *Draft Environmental Impact Statement*. They invested considerable time and effort to voice their opinions and concerns about managing personal watercraft use on Lake Powell. The most commonly addressed themes included Alternatives, Visitor Use, and Visitor Conflicts and Safety.

> The most common issue that was addressed (8,271 comments) by the public was whether the use of personal watercraft should be continued within the recreation area. The majority of these commenters (98%) supported continued personal watercraft use.
>
> Nearly 6,700 comments were received related to visitor conflict and safety. Most of these comments focused on issues such as boater education and the safety of personal watercraft users if the flat-wake zones proposed under alternative B (the preferred alternative in the *Draft Environmental Impact Statement*) were established.
>
> Comments on the alternatives were largely nonsubstantive in nature and generally supported or opposed an alternative. Alternative A received the most support because of one petition that contained more than 11,000 signatures.

A process referred to as "content analysis" was used to compile and correlate similar public comments into a format useable by NPS decision makers. The content analysis team (comprised of the NPS interdisciplinary planning team and the NPS contractor for preparation of this environmental impact statement) read all comments and determined which comments would require a response. Pursuant to the *National Environmental Policy Act* (NEPA), responses were prepared for all substantive comments, and the content of this *Final Environmental Impact Statement* also demonstrates responsiveness to public input.

Content analysis was performed in the four steps described below.

Develop a coding structure — Initially, a coding structure was developed to help sort comments into logical groups by topics and issues, derived from an analysis of the range of topics covered in the *Draft Environmental Impact Statement*, NPS legal guidance, and the letters themselves. The coding structure used was inclusive rather than restrictive; an attempt was made to capture all comment content. The codes were assigned to comments within letters, faxes, oral transcripts, meeting comment forms, and electronic mail.

Create a comment database — For each comment in a correspondence, codes were assigned by one staff person, validated by another, and then entered into a database.

Prepare a narrative summary — The database was used to help construct a narrative summary. Opinions, feelings, and preferences of one element or one alternative over another, and comments of personal and philosophical nature were all read and analyzed. All comments were considered, whether they were presented by thousands of people voicing the same concern or by a single person or organization raising a technical point.

Read and code public comment letters — After each document was coded, a series of steps were taken to determine whether the individual comment was substantive or nonsubstantive, according to the criteria set forth in the Council on Environmental Quality regulations.

> *Substantive comments* are comments that raise an issue regarding law or regulation, agency procedure or performance, compliance with stated objectives, validity of impact analyses, or other matters of practical or procedural importance. Substantive comments require a response or a corresponding revision in the final environmental impact statement text.
>
> *Nonsubstantive comments* are comments that offer opinions or provide information not directly related to issues or impact analyses. Nonsubstantive comments are used as background information for the environmental impact statement team, but do not require a formal response.

The purpose of reading, coding, and analyzing the contents of the comment letters was to assist the content analysis team in determining if the substantive issues raised by the public warranted further modification of the alternatives and further analysis of issues and impacts. With the information provided through the public review process, the agency reconsidered the draft preferred alternative (alternative B) and developed a "modified preferred alternative" (alternative B) as described in the "Alternatives" chapter of volume 1 of this *Final Environmental Impact Statement*.

Although the content analysis process attempted to capture the full range of public concerns, it is acknowledged that comments from people who chose to respond do not necessarily represent the sentiments of the entire public. Further, this is not a vote-counting process; emphasis in this process was on the content of the comment rather than the number of times a comment was received.

All comments received can be tracked to the original letter and can be sorted and reported in a variety of ways as described below.

ORGANIZATION OF COMMENTS AND RESPONSES

Comments and responses are categorized by topics and issues. A topic is a category of subject matter. These categories were developed through the scoping process and were selected in order to track major subjects through the *Draft Environmental Impact Statement*. Issues are subdivisions of topics. Each topic was separated into several issues to provide a better focus on the content of comments. For example, "Purpose and Need" was broken down into six issues, including the scope of the analysis (designated PN 1), park legislation and authority (PN 2), current personal watercraft regulatory framework (PN 3), objectives for taking the action (PN 4), issues eliminated from further consideration (PN 5), and NPS interpretation of impairment policies and mandates (PN 6).

After all public comments were entered into the database by issue, substantive issue reports were generated per topic and issue. The team analyzed the comments and then grouped comments with similar subject matter in order to prepare issue statements that represented all comments in each subject matter group. Some of the more detailed comments that were received appear verbatim in this document, while others were summarized, reflecting the content of several similar comments. The issue statements were then sent to professionals in the respective fields (i.e., Air Quality, Water Quality, Wildlife and Habitat) for analysis and response. The resulting issue statement responses were reviewed by the contractor, Environmental Quality Division of the National Park Service, and Glen Canyon National Recreation Area interdisciplinary planning team for accuracy and completeness. Revisions and additions were made, as needed, and the resulting responses to public comments are provided in this document.

There are two indexes provided in this document and each is described below.

Index of Comments by Category of Author — The "Author Index" lists businesses, organizations, and public agencies that submitted comments. Actual locations in this document of comments/responses by these groups can be found by locating the "Index of Comments by Category of Author" (see p. v) to first determine the document locator number and then choosing the appropriate topic heading in the Table of Contents. Individual members of the public submitted comments that were read, coded, and analyzed as described above. However, because of the large number of individuals submitting comments, those comment letters were not categorized by author. Authors of individual letters should consult the "Index of Comments by Topic," as described in the next paragraph. The majority of comments received by the National Park Service were form letters. Examples of the 11 different types of form letters are included at the end of this volume 2.

Index of Comments by Topic — To locate a response to a representative individual comment, refer to the "Index of Comments by Topic" (see p. x) to determine the topic a comment falls under, and then locate the comment/response section for that topic in the Table of Contents (see p. xiv). If an individual cannot find a representation of his or her comment in this document, the National Park Service can be contacted for a copy of the coded letter. All letters received will be kept at the Glen Canyon National Recreation Area headquarters. The authors of comments from agencies, businesses, and organizations should also consult this index to review all topics and issues of interest.

References to Volume 1 Within Responses

Within some responses to comments, readers are directed to a particular section, chapter, table, figure, or appendix to find more information about a particular subject. Those referrals pertain specifically to volume 1 of this *Final Environmental Impact Statement*.

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BUSINESS COMMENT LETTERS

ARAMARK Lake Powell Resorts and Marina - 01178; Purpose and Need: Current Personal Watercraft Regulatory Framework, Recreation Area Operations: Enforcement.

B.B. Financial Benefits Group, Inc. – 00195; Alternatives: Alternative C and Visitor Use, Personal Watercraft Use within GLCA.

Charles Gustafson, P.C. Attorney at Law - 00198; Alternatives: Alternative C (No Action), Purpose and Need: Current Personal Watercraft Regulatory Framework, Visitor Use and Experience: Impacts of Personal Watercraft Use, Purpose and Need: NPS Interpretation of Impairment Policies & Mandates.

Chiropractic Associates, Inc. - 00616; Purpose and Need: Park Legislation/Authority.

Desert Phantom Inc. - 00763; Visitor Use and Experience: Impacts of Personal Watercraft Use.

Lake Powell Waterworld - 00390; Socioeconomics: Impacts from Personal Watercraft Restriction, General Assumptions Used for Analysis: Personal Watercraft Use Trends and Assumptions.

Steadman's Recreation Inc. - 01190; Purpose and Need: Current Personal Watercraft Regulatory Framework, Visitor Use and Experience: Impacts of Personal Watercraft Use.

TAB Associates, Inc. - 00295; Alternatives: Alternative B (Preferred Alternative), Recreation Area Operations, Enforcement, General Assumptions Used for Analysis: Personal Watercraft Use Trends and Assumptions.

ORGANIZATION COMMENT LETTERS

American Canoe Association, Inc. - 01168; Visitor Conflicts and Safety: Affected Environment, Alternatives: Alternative A, Alternatives: Alternative B (Preferred Alternative), Alternatives: Environ. Preferred Alt./NEPA Section 101 & 102, Miscellaneous Topics: General Comments-Miscellaneous Topics, Threatened and Endangered Species: Impacts of Personal Watercraft Use, Visitor Use and Experience: Impacts of Personal Watercraft Use, Wildlife and Wildlife Habitat: Impacts of Personal Watercraft Use, Alternatives: New Alternatives or Elements.

American Watercraft Association - 01175; Alternatives: Alternative B (Preferred Alternative), Purpose and Need: Current Personal Watercraft Regulatory Framework, Visitor Conflicts and Safety: Impacts from Other Vessels, Socioeconomics: Impacts from Personal Watercraft Restriction, Purpose and Need: Scope of the Analysis.

Blue Ribbon Coalition - 01228; Socioeconomics: Affected Environment, Visitor Use and Experience: Affected Environment, Air Quality: Methodology and Assumptions, General Assumptions Used for Analysis: Personal Watercraft Use Trends and Assumptions, Soundscapes: Regulations, Methodologies and Assumptions.

Bluewater Network - 01002; Visitor Conflicts and Safety: Affected Environment, Soundscapes: Affected Environment, Wildlife and Wildlife Habitat: Affected Environment, Water Quality: Affected Environment, Socioeconomics: Affected Environment, Threatened and Endangered Species: Affected Environment, Air Quality: Affected Environment, Visitor Use and Experience: Affected Environment, Alternatives: Alternative C (No Action), Purpose and Need: Current Personal Watercraft Regulatory Framework, Consultation and Coordination: General Comments, Other NEPA Issues: General Comments, General Assumptions Used for Analysis: General Methodology for Establishing Impacts/Effects, Air Quality: Human Health Impacts from Personal Watercraft from Airborne Pollutants, Soundscapes: Impacts of Personal Watercraft Use, Visitor Use and Experience: Impacts of Personal Watercraft Use, Wildlife and Wildlife Habitat: Impacts of Personal Watercraft Use, Water Quality: Impacts on Water Quality from Personal Watercraft Use, Socioeconomics: Methodology and Assumptions, Air Quality: Methodology and Assumptions, Purpose and Need: NPS Interpretation of Impairment Policies & Mandates, Purpose and Need: Park Legislation/Authority, General Assumptions Used for Analysis: Personal Watercraft Use Trends and Assumptions, Visitor Use: Personal Watercraft Use within GLCA, Visitor Use and Experience: Regulations, Methodologies and Assumptions, Soundscapes: Regulations, Methodologies and Assumptions, Water Quality: Regulations, Methodologies and Assumptions, Wildlife and Wildlife Habitat: Regulations, Methodologies and Assumptions, Visitor Conflicts and Safety: Regulations, Methodologies, and Assumptions, Purpose and Need: Scope of the Analysis.

Escalante Wilderness Project - 01197; Alternatives: Alternative C (No Action), Soundscapes: Impacts of Personal Watercraft Use, Water Quality: Impacts on Water Quality from Personal Watercraft Use, Visitor Use: Personal Watercraft Use within GLCA.

Living Rivers - 01174; Alternatives: Alternatives Eliminated, Alternatives: Elements Common to All Alternatives, Alternatives: Environ. Preferred Alt./NEPA Section 101 & 102, Alternatives: New Alternatives or Elements, Purpose and Need: NPS Interpretation of Impairment Policies & Mandates, Purpose and Need: Park Legislation/Authority, General Assumptions Used for Analysis: Personal Watercraft Use Trends and Assumptions.

Multiple Access Conservation Coalition - 00209; Alternatives: Alternative A, Alternatives: Alternative B (Preferred Alternative), Socioeconomics: Economic Impact Analysis, Visitor Use and Experience: Impacts of Personal Watercraft Use, Alternatives: New Alternatives or Elements.

National Marine Manufacturers Association - 01176; Alternatives: Alternative B (Preferred Alternative), Visitor Conflicts and Safety: Impacts from Other Vessels, Purpose and Need: Scope of the Analysis.

National Park Conservation Association - 01248; Alternatives: Alternative B (Preferred Alternative), Alternatives: Alternative C (No Action), Visitor Conflicts and Safety: Impacts of Personal Watercraft Use, Visitor Use and Experience: Impacts of Personal Watercraft Use, Purpose and Need: Park

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North American Wild Sheep Utah Chapter - 01286; Air Quality: Methodology and Assumptions, Water Quality: Regulations, Methodologies and Assumptions.

Page-Lake Powell Chamber of Commerce and Visitor Bureau - 01191; Socioeconomics: Impacts from Personal Watercraft Restriction.

Personal Watercraft Industry Association and Members - 01344; Wildlife and Wildlife Habitat: Affected Environment, Soundscapes: Affected Environment, Shoreline/Submerged Aquatic Vegetation: Affected Environment, Alternatives: Alternative B (Preferred Alternative), Purpose and Need: Current Personal Watercraft Regulatory Framework, Recreation Area Operations: Enforcement, Miscellaneous Topics: General Comments-Miscellaneous Topics, General Assumptions Used for Analysis: General Methodology for Establishing Impacts/Effects, Soundscapes: Impact from Other Vessels, Socioeconomics: Impacts from Personal Watercraft Restriction, Visitor Conflicts and Safety: Impacts of Personal Watercraft Use, Cultural Resources: Impacts from Visitor Access and Other Watercraft, Air Quality: Impacts on Air Quality Related Values (visibility, vegetation), Water Quality: Impacts on Water Quality from Personal Watercraft Use, Air Quality: Methodology and Assumptions, Soundscapes: Regulations, Methodologies and Assumptions, Water Quality: Regulations, Methodologies and Assumptions, Purpose and Need: Scope of the Analysis.

River Runners for Wilderness – 01179; Alternatives: Alternative C (No Action); Visitor Use and Experience: Impacts of Personal Watercraft Use; Visitor Use: Personal Watercraft Use within NPS Units; Wildlife and Wildlife Habitat: Impacts of Personal Watercraft Use.

Sierra Club - 01391; Visitor Use and Experience: Affected Environment, Soundscapes: Cumulative, Soundscapes: Impacts of Personal Watercraft Use, Alternatives: New Alternatives or Elements, General Assumptions Used for Analysis: Personal Watercraft Use Trends and Assumptions, Soundscapes: Regulations, Methodologies and Assumptions.

Sierra Club, Grand Canyon Chapter - 01266; Alternatives: New Alternatives or Elements.

Sierra Club Utah Chapter - 01245; Soundscapes: Affected Environment, Alternatives: Alternatives Eliminated, Visitor Use and Experience: Cumulative, Socioeconomics: Economic Impact Analysis, Other NEPA Issues: General Comments, General Assumptions Used for Analysis: General Methodology for Establishing Impacts/Effects, Visitor Use and Experience: Impacts of Personal Watercraft Use, Alternatives: New Alternatives or Elements, Purpose and Need: Park Legislation/Authority, Visitor Use and Experience: Regulations, Methodologies and Assumptions, Purpose and Need: Scope of the Analysis.

Utah Shared Access Alliance (USA-ALL) - 01239; Water Quality: Affected Environment, Visitor Conflicts and Safety: Affected Environment, Alternatives: Alternative A, Alternatives: Alternative B (Preferred Alternative), Alternatives: Alternative C (No Action), Recreation Area Operations: Enforcement, Recreation Area Operations: Impacts of Personal Watercraft Use, Shoreline/Submerged Aquatic Vegetation: Impacts of Personal Watercraft Use, Visitor Use and Experience: Impacts of Personal Watercraft Use, Purpose and Need: Objectives in Taking Action, Purpose and Need: Park Legislation/Authority, Water Quality: Regulations, Methodologies and Assumptions.

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Arizona State Parks/SHPO - 00194; Alternatives: Alternative B (Preferred Alternative), Visitor Use: Personal Watercraft Use within GLCA.

County Commission Chairman - 00056; Alternatives: New Alternatives or Elements, Visitor Use: Personal Watercraft Use within GLCA.

Region 8 US Environmental Protection Agency - 01393; Visitor Use and Experience: Affected Environment, Water Quality: Affected Environment, Alternatives: Alternative B (Preferred Alternative), Alternatives: Alternative C (No Action), Alternatives: Alternatives Eliminated, Alternatives: Elements Common to All Alternatives, Alternatives: Environ. Preferred Alt./NEPA Section 101 & 102, Other NEPA Issues: General Comments, General Assumptions Used for Analysis: General Methodology for Establishing Impacts/Effects, Soundscapes: Impacts of Personal Watercraft Use, Air Quality: Impacts on Air Quality Related Values (visibility, vegetation), Water Quality: Impacts on Water Quality from Personal Watercraft Use, Air Quality: Methodology and Assumptions, Alternatives: New Alternatives or Elements, General Assumptions Used for Analysis: Personal Watercraft Use Trends and Assumptions, Water Quality: Regulations, Methodologies and Assumptions.

State of Utah Department of Natural Resources Division of Parks and Recreation - 01170; Alternatives: Alternative B (Preferred Alternative), Visitor Conflicts and Safety: Boater Education, Purpose and Need: Current Personal Watercraft Regulatory Framework, Miscellaneous Topics: General Comments-Miscellaneous Topics, Socioeconomics: Impacts from Personal Watercraft Restriction, Socioeconomics: Methodology and Assumptions, Visitor Use: Personal Watercraft Use within GLCA.

US Fish and Wildlife Service - Utah Field Office - 01137; Wildlife and Wildlife Habitat: Affected Environment, Water Quality: Affected Environment, Threatened and Endangered Species: Impacts of Personal Watercraft Use, Alternatives: New Alternatives or Elements, Water Quality: Regulations, Methodologies and Assumptions.

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EXAMPLES OF FORM LETTERS SUBMITTED

Cook, Jim — 00299 (Form 10)

Fasulkey, Robert — 00013 (Form 2)

Fields, John — 00243 (Form 7)

Green, Jacqueline P. — 00322 (Form 4)

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Comments and Responses

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AIR QUALITY

Affected Environment

Issue 1: *Inadequate Data Collection and Monitoring*

A *Comment*: The air quality analysis uses data collected over one week, while stating that three years of data are required to make a reasonable assessment. The National Park Service has known about the ban on personal watercraft without a NEPA Environmental Impact Statement, since March 21, 2000, providing over two years to collect the required data and compile a report for the air quality. Even if three years worth of data were not available to be collected, the National Park Service clearly had more than a week to collect and monitor the impacts on the air quality that may be occurring from the hydrocarbon releases of personal watercraft.

Response: Although the National Park Service promulgated an amended regulation in March 2000, it was not until April 2001 when the National Park Service, in a settlement agreement with the Bluewater Network, began the National Environmental Policy Act (NEPA) process to determine if personal watercraft use was appropriate based on an environmental impact analysis. The National Park Service determined that Labor Day weekend would be the best time to collect data to assess the effect of personal watercraft use on air quality because it is the busiest part of the visitor use season.

Public Comment:	*Commenter:*	*Affiliation:*
905G		Individual

Impacts to Human Health and Air Quality Related Values (Visibility and Vegetation) from Personal Watercraft

Issue 1: *General Impacts of Personal Watercraft on Air Quality*

A *Comment*: The California Air Resources Board (CARB) report Outboard Engine and Personal Watercraft Emissions to Air and Water: A Laboratory Study states that for all measured air pollutants, two-stroke personal watercraft and outboards were generally and substantially higher than comparable four-stroke engines. In the case of hydrocarbons (THC), two-stroke motors were far more polluting than comparable four-stroke motors.

Response: The comment is correct for hydrocarbons, carbon monoxide (CO), and particulate matter. In the *Final Environmental Impact Statement*, the Environmental Protection Agency (EPA) NONROAD model was used to estimate watercraft emissions. The modeling results show that HC (hydrocarbon) emission factors for two-stroke carbureted personal watercraft engines are approximately 13 times greater than for four-stroke personal watercraft engines. This is a major factor in the EPA rule requiring the phase-out of carbureted two-stroke engines. A discussion of the emission factors and effects on forecast watercraft emissions are discussed in the "Environmental Consequences" chapter under "Air Quality" in each alternative discussion.

Public Comment:	*Commenter:*	*Affiliation:*
1002K	Bluewater Network	Organization

B *Comment*: Direct-injected two-stroke and four-stroke personal watercraft will not solve all problems. California Air Resources Board research found that direct-injection two-stroke engines emit approximately seven times more total hydrocarbons than do four-stroke engines. Hydrocarbons are a key component in the formation of smog. In the case of formaldehyde, a possible human carcinogen, direct-injection engines emitted more than both the carbureted two-stroke and four-stroke engines. In the case of nitrogen oxides (NO_x) and carbon monoxide, the four-stroke engine emitted more than the direct-injection engines. Neither the direct-injection nor the four-stroke personal watercraft will do anything to address the impacts of the more than 1.1 million thrillcraft already operating on American waters.

Response: The National Park Service acknowledges that changing from carbureted two-stroke personal watercraft engines to direct-injection two-stroke engines may result in increases of airborne particulate-associated PAH (polycyclic aromatic hydrocarbons). In addition, a recent study by the Tahoe Regional Planning Agency (2003) compared the concentrations of PAH compounds released into the water and found that the two-stroke carbureted outboard engine emitted lower PAH levels into the water than did the two-stroke direct-injected engine. The four-stroke carbureted outboard engine emitted the lowest PAH levels, as well as other gasoline-related contaminants into the water (TRPA 2003; CARB 2001). However, the two-stroke carbureted outboard engine emitted higher levels of benzene than the two-stroke direct-injected engine model (CARB 2001). Personal watercraft engines follow the same patterns of emission rates as outboard engines (CARB 2001). The TRPA (2003) study confirms other findings regarding emissions into the water and does not substantially change NPS conclusions regarding water quality impacts. The National Park Service stated a commitment in the *Final Environmental Impact Statement* to monitor for chemical compounds.

Public Comment:	*Commenter:*	*Affiliation:*
1002L	Bluewater Network	Organization

Issue 2: ***Polycyclic Aromatic Hydrocarbon Concentrations from Personal Watercraft Use at Glen Canyon National Recreation Area Do Not Pose Any Health Risks***

A Comment: Continued personal watercraft use at Glen Canyon National Recreation Area will not pose any adverse health risks for park visitors under even the "worst case" airborne PAH concentrations that could theoretically be generated by the vessels.

Response: The commenter submitted an analysis of PAH emissions at Glen Canyon to support the comment. The commenter's analysis uses many conservative assumptions and a pollutant dispersion model to conclude that PAH exposure to personal watercraft users from personal watercraft PAH emissions would be less than one thousandth of one % (<0.001%) of an Occupational Safety & Health Administration (OSHA) limit for PAH exposure. Shoreline exposure would be even lower. OSHA published the limit as part of a discussion of safety and health related to coal tar pitch volatiles. The limit is for total PAH, and the comment in reference to OSHA for limits of coal tar volatiles does not apply in the context of the Glen Canyon personal watercraft rule-making discussion. In addition, another relevant study concluded that there are some health effects associated with PAH emissions (see *Environmental and Occupational Exposure to Toxic Air Pollutants from Winter Snowmobile Use in Yellowstone National Park* (Kado et al. 2001). Therefore, the National Park Service cannot support a conclusion, as the commenter suggests, that personal watercraft use at Glen Canyon would pose no adverse health risks from toxic air pollutant emissions.

Public Comment:	*Commenter:*	*Affiliation:*
1344H	Personal Watercraft Industry Association	Organization

Issue 3: ***Nitrogen Oxide Emissions***

A Comment: The *Final Environmental Impact Statement* should also note that nitrogen oxide pollutant emissions, a smog precursor, are likely to increase with the conversion to more four-stroke engines.

Response: The *Draft* and *Final Environmental Impact Statements* do note in the "Air Quality" section of the "Environmental Consequences" chapter under "Emission Standards for Gasoline-Powered Marine Engines," that nitrogen oxide contamination will increase with implementation of the EPA 1996 rule.

Public Comment:	*Commenter:*	*Affiliation:*
1393O	Environmental Protection Agency	Public Agency

Issue 4: ***The Draft Environmental Impact Statement Underestimates the Reduction of Personal Watercraft Emissions Over Time***

A Comment: There were a number of commenters concerned that the changeover to four-stroke and two-stroke direct injection personal watercraft engines to meet the requirements of the EPA 2006 and CARB 2008 emission standards is occurring much more rapidly than EPA and National Park Service has estimated. Amounts of emissions at Glen Canyon will accordingly continue to decline rapidly, achieving a reduction of approximately 90% by 2012.

Response: All alternatives use the rate of conversion of the engines from carbureted two-stroke to clean engines consistent with the EPA rule, "Final Rule for New Gasoline Spark-Ignition Marine Engines" (EPA 1996a). The National Park Service used the EPA data where it was assumed that 21.6% of the carbureted two-stroke engines in use in 1998 would be replaced by 2004 and that 58.4% would be replaced by 2012. The commenter's opinion is principally based on confidential, proprietary personal watercraft sales and forecast data prepared by personal watercraft manufacturers. This proprietary data was not supplied with the comment and, therefore, was not available to the National Park Service.

The commenter states that the data indicates that the conversion of two-stoke carbureted personal watercraft models to cleaner direct-injection engines is occurring more rapidly than anticipated in the 1996 EPA analysis of the effects of the conversion rule. While the National Park Service has no reason to doubt that personal watercraft conversions and sales may be proceeding at a greater rate than forecast by the Environmental Protection Agency, there is no survey or similar data available at this time that indicates that the engine mix at Glen Canyon is proceeding at a faster or slower rate than the EPA forecast. Therefore, use of the EPA rates is considered appropriate in disclosing potential impacts on air quality. Under the modified preferred alternative (alternative B), personal watercraft engines would be 100% compliant after 2012.

Public Comment:	*Commenter:*	*Affiliation:*
1344E	Personal Watercraft Industry Association	Organization

B *Comment*: Commenter expressed concern that personal watercraft emissions are declining faster than forecasted by the Environmental Protection Agency. The existing fleet of personal watercraft has achieved a 25% reduction compared to HC + NO_x emission levels before the EPA regulation became effective, and will achieve reductions greater than 80% by 2012.

Response: The comment is principally based on two assumptions made by the commenter. The first is based on confidential, proprietary information regarding personal watercraft sales and forecast data prepared by personal watercraft manufacturers. No supporting data was supplied with the comment. The commenter states that the data indicates that the conversion of personal watercraft models to cleaner engines is occurring more rapidly than anticipated in the 1996 EPA analysis of the effects of the conversion rule. While the National Park Service has no reason to doubt that personal watercraft conversions and sales may be proceeding at a greater rate than forecast by the Environmental Protection Agency, there is no survey or similar data available at this time indicating the engine conversion at Glen Canyon is proceeding at a faster or slower rate than the EPA forecast. Therefore, use of the EPA rates is considered appropriate, and use of an accelerated rate may be considered speculative without additional supporting data.

The second assumption by the commenter is that 75% of the personal watercraft at Glen Canyon will have engines that comply with the California Air Resources Board (CARB) conversion rule for all years, which requires that marine engine emission reductions targeted by the Environmental Protection Agency for 2006 be achieved in California by 2001. The California rule then requires further emission reductions by 2004 and 2008 (Title 13, California Code of Regulations, sections 2440–2448). The commenter assumes that 50% of the personal watercraft users at Glen Canyon will be from California and all will have CARB-compliant watercraft, and that, because of manufacturing and sales efficiencies outside of California, an additional 25% of the Glen Canyon personal watercraft users will have CARB-compliant watercraft. The National Park Service concurs that many watercraft users at Glen Canyon have California-registered personal watercraft, and that they will meet the CARB standards. However, there is no data relative to personal watercraft at Glen Canyon to confirm the 75% figure assumed by the commenter. The NPS emission calculations are conservative only in the sense that they do not specifically account for watercraft that have already been or will be converted to meet CARB standards. Under the modified preferred alternative (alternative B), personal watercraft engines would be 100% compliant after 2012.

Public Comment:	*Commenter:*	*Affiliation:*
1344C, 1344F	Personal Watercraft Industry Association	Organization

C *Comment*: Commenter believes that the draft environmental impact statement reference to moderate levels of air quality impacts from HC, NO_x, and CO emissions associated with personal watercraft use is incorrect and potentially misleading. The commenter believes that these emissions, even under the "worst case" scenario, would not pose a health risk for park visitors.

Response: Emission levels shown in the Air Quality analysis tables in the "Environmental Consequences" chapter are not directly comparable with the emission levels submitted by the commenter, because the National Park Service Air Quality Division calculates emissions on an annual basis, and the commenter's calculations are for an average boating day during the boating season. Some assumptions made for NPS calculations are more conservative than those used for the commenter's calculations. The National Park Service assumed that the conversions from carbureted two-stroke engines to cleaner engines would occur at the rate forecast by the Environmental Protection Agency. Based on the NPS model (presented in the tables as tons per year of estimated hydrocarbon and nitrogen oxide emissions for all alternatives), a 21.6% conversion is assumed from 1998 levels by 2004 and a 58.4% conversion by 2012. The commenter assumes a faster conversion. The commenter assumes that emissions would be reduced because a significant portion of personal watercraft would be cleaner than EPA requirements due to compliance with the more restrictive California requirements. There is no data relative to personal watercraft at Glen Canyon to confirm the 75% figure that is assumed by the commenter. The NPS emission calculations are conservative only in the sense that they do not specifically account for watercraft that have already been or will be converted to meet CARB standards. Under the modified preferred alternative (alternative B), personal watercraft engines would be 100% compliant after 2012, which would result in a substantial reduction in emissions. Using the EPA forecast rate of emission reductions in the NPS air quality emissions model, and assuming a 2% annual visitor growth rate, the personal watercraft emissions associated with the modified preferred alternative would be up to 365 tons per year of HC + NO_x by 2012 and 2,955 tons per year of CO, which is considered by the National Park Service to be a moderate adverse effect.

Public Comment:	*Commenter:*	*Affiliation:*
1344F	Personal Watercraft Industry Association	Organization

Impacts from Other Vessels

Issue 1: ***General Comments About Impacts on Air Quality From Other Vessels***

A *Comment*: The *Draft Environmental Impact Statement* fails to mention the effects on air quality from other boats.

Response: The effects on air quality from other motorized watercraft at Glen Canyon were addressed in the cumulative impacts analysis of air quality in the "Environmental Consequences" chapter. The National Park Service acknowledges that other motorized watercraft emit pollutants; however, management of other watercraft is beyond the scope of this analysis. See responses in the "Purpose of and Need for Action" chapter regarding the scope of this analysis.

Public Comment:	*Commenter:*	*Affiliation:*
1209D, 132B		Individual

Methodology and Assumptions

Issue 1: *Derivation of Engine Load*

A *Comment*: The *Final Environmental Impact Statement* should disclose the derivation of the 21% average engine load. Given what would be a major impact in the analysis, an explanation of why this is the correct assumption for personal watercraft would be helpful.

Response: The assumption of an average engine load of 21% for personal watercraft was based on the activity data used in the EPA NONROAD model.

Public Comment:	*Commenter:*	*Affiliation:*
1393Q	Environmental Protection Agency	Public Agency

Issue 2: *Inconsistent Estimates Between Water and Air Quality Analysis*

A *Comment*: The *Final Environmental Impact Statement* should use the same percentage for how much and which pollutants volatize in both the air and water quality impacts sections. No estimate of the percent that volatilizes is given in the water quality section. In the air quality section it is stated that up to 30% of the fuel from personal watercraft is unburned and is discharged as gaseous hydrocarbons (*Draft Environmental Impact Statement* p. 181). The numbers should be consistent for the analysis.

Response: The *Draft Environmental Impact Statement* incorrectly stated that 30% of the fuel is exhausted into the air. However, the *Final Environmental Impact Statement* correctly states that up to one-third of the fuel delivered to the two-stroke carbureted personal watercraft engine is unburned and discharged into the water. It is difficult to determine how much of the fuel is volatilized into the atmosphere. As stated in "Methodology and Assumptions" section under "Air Quality", many organic pollutants that are initially dissolved in the water volatilize to the atmosphere, especially if they have high vapor pressures, are lighter than water, and mixing occurs at the air/water interface. It is difficult to assess the specific evaporation rates of exhaust pollutants from personal watercraft because the rates will differ according to the ratio of gas to oil used, by fuel brand, by engine, and operating conditions such as temperature and water aeration.

In 1994, the Environmental Protection Agency released a public memorandum entitled "The Effects of Marine Engine Exhaust on Water Quality: Summary of Findings of Various Research Studies." This document summarizes 11 research papers and presents volatilization rates and dilution ratios for observable effects such as taste, odor, and generation of oil film.

At temperatures commonly found in Lake Powell during the summer boating season (77°F–86°F), 78%–84% of the gasoline/oil mixture (50:1) for carbureted two-stroke engines would be evaporated from the water to the air in 1.2 hours (EPA 1994). This EPA review also cites a study by the Boating Industrial Association (1974) that describes the two-stroke gas/oil mixture as having an 11-day half-life in still water (such as a laboratory tank) and a half-life of less than one day in open, aerated water (such as a lake). A description of the volatile nature of five gasoline constituents has been provided in the "Water Quality" section of the "Affected Environment" chapter.

Public Comment:	*Commenter:*	*Affiliation:*
1393V	Environmental Protection Agency	Public Agency

B *Comment*: On page 181, the National Park Service states that even though personal watercraft exhaust is initially expelled in the water, "a portion" of the exhaust pollutants end up in the atmosphere. This conclusion leaves the impression with the reader that personal watercraft do not have a significant impact upon Glen Canyon's air quality. However, in the water quality section of the affected environment chapter, the National Park Service states that a vast majority of personal watercraft unburned hydrocarbon pollution, which can represent nearly a third of all emissions discharged from a typical two-stroke personal watercraft, ends up in the air. In particular, the National Park Service notes that "about 85% of these [hydrocarbon] compounds are highly volatile." These two statements about the fate of personal watercraft pollutants contradict each other and appear to be an attempt to downplay the impact personal watercraft have on both air and water quality.

Response: As stated in the "Methodology and Assumptions" section under "Air Quality" in the "Environmental Consequences" chapter, many organic pollutants that are initially dissolved in the water volatilize to the atmosphere, especially if they have high vapor pressures, are lighter than water, and mixing occurs at the air/water interface. As stated in the previous response, studies have indicated that at temperatures between 77°F–86°F, 78%–84% of the unburned gasoline and fuel additives are evaporated. However, the specific evaporation rate is difficult to assess on the lake because rates differ according to fuel mixture, fuel type, engine, and operating conditions such as temperature and water aeration. Under the modified preferred alternative (alternative B), all personal watercraft engines would be 100% compliant with EPA standards after 2012. The analysis of air quality in the *Final Environmental Impact Statement* demonstrates that there would be a substantial reduction in emissions of pollutants into the air under alternative B compared to alternative A (continuing current management). Furthermore, the National Park Service finds that the modified preferred alternative (alternative B) presented in the *Final Environmental Impact Statement* (including the provision for continued personal watercraft use, if implemented), would not result in an impairment of park air or water quality.

Public Comment:	*Commenter:*	*Affiliation:*
1002AD	Bluewater Network	Organization

Issue 3: ***Include Updated Evaporative Standards Proposed by the Environmental Protection Agency***

A Comment: It should be noted in the *Final Environmental Impact Statement* that in July 2002, EPA proposed cleaner evaporative standards for personal watercraft. If promulgated, these standards will be relevant for future environmental studies of this issue.

Response: The text in the "Air Quality Methodology and Assumption" section of the "Environmental Consequences" chapter has been changed to include the proposed EPA evaporative standards. Also see response to comment 4 A below.

Public Comment:	*Commenter:*	*Affiliation:*
1393U	Environmental Protection Agency	Public Agency

Issue 4: ***The Draft Environmental Impact Statement Fails to Mention the Impact of Personal Watercraft Permeation Losses***

A Comment: Permeation is the process by which individual fuel molecules may penetrate the walls of the various assembly components of a fuel system directly to the outside air. According to the California Air Resources Board (CARB), evaporative and permeation emissions from nonroad engines/fuel systems and gas tanks are significant. For example, CARB research found that a typical nonroad engine (5-gallon fuel tank filled to half its capacity) is likely to emit over 7 grams of hydrocarbon pollution in a 24-hour summer diurnal cycle. According to the EPA, many of America's approximately 10 million off-road vehicles such as all-terrain vehicles, personal watercraft, and snowmobiles have similar tanks.

Response: Nonexhaust hydrocarbon emissions from watercraft are less than exhaust emissions but are not insignificant. For watercraft, the principal sources of nonexhaust emissions are evaporative emissions from fuel tanks when the engine is not in use and refueling emissions. The quantities of these emissions are related to the number of pieces of equipment, number of trips, and watercraft fuel tank volume. The phase-out of carbureted two-stroke personal watercraft engines varies by alternative, resulting in variations in exhaust emissions. In addition, fuel tank volumes would not be anticipated to change significantly. The number of trips per year was not expected to differ between alternatives over the next 10 years. Therefore, nonexhaust emissions would be very similar for all alternatives. In July 2002, the Environmental Protection Agency proposed new evaporative standards for gasoline-fueled boats and personal watercraft. These proposed standards would require most new boats produced in 2008 or later to be equipped with low-emission fuel tanks or other evaporative emission controls. The *Final Environmental Impact Statement* text reflects the change to include a discussion of nonexhaust emissions in the "Air Quality Methodology" section of the "Environmental Consequences" chapter.

Public Comment:	*Commenter:*	*Affiliation:*
1002V	Bluewater Network	Organization

Issue 5: *The Research on Air Quality Effects of Personal Watercraft Emissions Presented in the Draft Environmental Impact Statement Is Not Applicable to New Engine Technology*

A *Comment*: National Park Service notes that recent studies suggest changing from two-stroke carbureted to two stroke direct injection personal watercraft engines might increase PAH emissions. A study by Norman Y. Kado et al, Airborne Particle Emissions from two- and four-stroke Outboard Marine Engines: Polycyclic Aromatic Hydrocarbon and Bioassay Analysis, (Kado study) quantified PAH concentrations in airborne particulate emissions. The Kado study showed that the PAH emissions from the direct-injection two-stroke engines tested were greater than from carbureted two-stroke engines. The direct-injection two-stroke outboard engine used in that study was a 1999 model and represented very early technology, and the results of the study are not applicable to newer model direct-injection outboard engines, much less personal watercraft engines.

Response: The commenter rejects the applicability of the Kado study to newer engines including PWC engines. Because many older engines would still be allowed to operate at Lake Powell through 2012, the National Park Service assumes that there would still be PAH emissions and the Kado study is relevant. In addition, a recent study by the Tahoe Regional Planning Agency (2003) compared the concentrations of PAH compounds released into the water and found that the two-stroke carbureted outboard engine emitted lower PAH levels into the water than did the two-stroke direct-injected engine. The four-stroke carbureted outboard engine emitted the lowest PAH levels, as well as other gasoline-related contaminants into the water (TRPA 2003; CARB 2001). However, the two-stroke carbureted outboard engine emitted higher levels of benzene than the two-stroke direct-injected engine model (CARB 2001). Personal watercraft engines follow the same patterns of emission rates as outboard engines (CARB 2001). The TRPA (2003) study confirms other findings regarding emissions into the water and does not substantially change NPS conclusions regarding water quality impacts.

Nevertheless, while conversion of some carbureted two-stroke engines to direct-injection two-stroke engines would result in increased PAH emissions, the concurrent conversion to four-stroke engines would result in reduced PAH emissions. As shown by the commenter, using Kado data, the combined PAH emissions of one direct-injection two-stroke engine and one four-stroke engine would be slightly less than the PAH emissions of the two carbureted two-stroke engines that would be replaced. Therefore, the increase or decrease of PAH emissions as carbureted two-stroke engines are converted to cleaner engine types would depend on the relative numbers of the types of cleaner engines. In addition, in speaking with local personal watercraft businesses, the majority of newer personal watercraft models being sold are four-stroke engines, not two-stroke direct-injection engines but no specific data is available. The speculation of the mix of engine types would not appreciably change NPS conclusions made in the *Final Environmental Impact Statement.*

Public Comment:	*Commenter:*	*Affiliation:*
1344G	Personal Watercraft Industry Association	Organization

ALTERNATIVES

Alternative B (Modified Preferred Alternative)

Issue 1: ***Alternative B with Changes***

A *Comment*: The preferred alternative should keep personal watercraft entirely out of the Dirty Devil, the Colorado beyond the highway bridge (not further upstream at Sheep Canyon), all of the Escalante and at least as much of the San Juan arm as in Alt B. In effect, restrict them to the main body of the reservoir only.

Response: The *Final Environmental Impact Statement* includes additional restrictions for alternative B (the modified preferred alternative) that would prohibit personal watercraft use on the Dirty Devil River beyond the Highway 95 bridge. This restriction would provide a recognizable geographical location for visitors and law enforcement, maintain traditional fishing values, reduce conflict among users, and improve safety.

Public Comment:	*Commenter:*	*Affiliation:*
139E		Individual

B *Comment*: Commenter recommends that if the Park Service chooses to enact its preferred alternative (alternative B), it should be modified to create more areas of Glen Canyon National Recreation Area that are off-limits to personal watercraft use. Specifically, the commenter recommends that National Park Service prohibit personal watercraft use in any of the canyons of Lake Powell or tributary rivers where the shore-to-shore (or canyon wall-to-canyon wall) distance is less than one-half mile.

Alternative B should be modified as follows: (1) No-wake zones should apply to all craft, not just personal watercraft to improve safety. (2) No-wake zones should apply to all narrow canyons (width to be determined).

Response: Under Utah State law, all boaters must operate at flat-wake speeds or idle speed within 150 feet of another boat, a person in or floating on the water, a waterskier (except those being towed), a shore fisherman, a launching ramp, a dock, or a designated swimming area. Arizona state law requires all boaters to operate at flat-wake speeds within 60 feet of another vessel. The modified preferred alternative (alternative B) addresses signing, buoys, and boater education that will enhance other watercraft operators' observance of safe boating practices.

In addition, alternative B (the modified preferred alternative) currently provides for a three-year pilot study to further evaluate personal watercraft use areas. Potential restrictions of personal watercraft use in other locations of the recreation area would be evaluated at that time. The purpose of the pilot study and a description of how it would be implemented are provided in appendix C.

Public Comment:	*Commenter:*	*Affiliation:*
1248F	National Park Conservation Association	Organization
1129B		Individuals

C *Comment*: The National Park Service should develop additional management restrictions with the goal of elimination of the use of 2 cycle personal watercraft engines not meeting the 2006 emission standards over a ten (10) year time period.

Response: If implemented, the modified preferred alternative (alternative B) in the *Final Environmental Impact Statement* would require that personal watercraft meet the EPA 2006 emission standards by the end of 2012. Personal watercraft not meeting the standards would no longer be allowed to operate in Glen Canyon National Recreation Area beginning in 2013.

The National Park Service expects that by 2012, most personal watercraft owners would already be in compliance with the 2006 EPA marine engine standards. The impact on visitors as a result of the 2012 ban on carbureted two-stroke personal watercraft use is expected to be small. Personal watercraft manufacturers currently offer models that are compliant with the EPA 2006 standards, and new personal watercraft purchased later than 2006 would already be compliant. The average operating life of a personal watercraft is 5 to 10 years, depending upon the source (see the "General Methodology" section in the "Environmental Consequences" chapter). As a result, it is expected that the majority of noncompliant personal watercraft will no longer be in operation when the engine restrictions proposed under the modified preferred alternative (alternative B) take effect in 2012.

Public Comment:	*Commenter:*	*Affiliation:*
641A		Individual

Issue 2: *Lake Management Plan Should not be an Element of Alternatives*

A *Comment*: Commenters indicated that they support alternative B, but believe the Lake Management Plan should be excluded from the alternative.

Response: The National Park Service must manage Glen Canyon National Recreation Area to protect the recreational opportunities available at the park, as well as the natural resources found in the lake and surrounding lands. To accomplish this, a lake management plan will provide the tools necessary to analyze activities that take place on the lake and determine if unacceptable impacts are occurring. Even though there is rationale and need to consider management of personal watercraft under a separate decision-making framework, there remains the need to examine all uses of the lake collectively. As identified in the cumulative effects analysis under each impact topic, there are many management issues involving the mix of lake uses that will require additional planning.

Public Comment:	*Commenter:*	*Affiliation:*
209A	Multiple Access Conservation Coalition	Organization
608D, 608F, 808B, 1133D, 1134D		Individuals

Issue 3: *Monitoring Plan as an Element of Alternative B*

A *Comment*: On page 169, it is stated that some hydrocarbons can adsorb onto suspended soil particles and settle out. Any monitoring plan should therefore include sediment chemistry monitoring in marinas and sediment deposition areas down-current for the constituents most likely to settle, including poly-aromatic hydrocarbons. Additionally, to understand whether current sediment conditions and aquatic health of the benthic community is altered from the historical baseline, the monitoring plan should include benthic population sampling, and bioassay of these sediments. The *Final Environmental Impact Statement* should identify whether there is potential for these sediment deposition areas to be dredged. If so, it may merit implementing management practices to reduce or eliminate release of toxic constituents from personal watercraft use.

Response: Text has been added to the *Final Environmental Impact Statement* in the "Alternatives" section to describe the monitoring plan that was added to alternative B (the modified preferred alternative). A report is presently being completed for a study that was done to determine the chemical content of sediment at the main inflow area of the Colorado River. Funding is currently being sought for another study to do the same evaluation in the San Juan and Escalante inflow/sediment deposition areas. These studies will identify the hydrocarbon content of these sediments. In addition, another study is currently being conducted that examines the dynamics of sediment re-suspension and reworking in the Colorado River inflow. The monitoring plan that will be developed for the lake will include polycyclic aromatic hydrocarbons (PAH), as well as other gasoline constituents that may become re-suspended when there is down-cutting of the sediment deposits as a result of lowering lake level. The monitoring program that will be developed will also consider the most likely places for contamination, such as marina areas and areas downstream from major sediment depositional zones, if appropriate. The data from a study examining visitor effects (including hydrocarbon contamination) in three canyons will be used to develop water quality baselines for Glen Canyon National Recreation Area. A lake-wide monitoring plan will then be developed using the data gathered and the methods tested in these three studies (sediment, three canyons, and synoptic). Plan development will be guided by the Technical Advisory Committee that was formed in 1996 by the National Park Service, the Departments of Environmental Quality Water Divisions of Utah and Arizona, and other interested organizations and agencies (including the Environmental Protection Agency) to protect Lake Powell water quality. The Technical Advisory Committee provides an excellent vehicle for establishing standards and protocols for Lake Powell that are acceptable to the states and that conform with the states' regulations developed under authority of the *Clean Water Act*. Benthic population sampling and bioassay may be included in the monitoring plan as determined to be appropriate by the Technical Advisory Committee. Dredging to remove sediment is not contemplated by the National Park Service.

Public Comment:	*Commenter:*	*Affiliation:*
1393I, 1393J	Environmental Protection Agency	Public Agency

Issue 4: ***Encourage Coordination with Two States to Develop Uniform Laws***

A *Comment*: The National Marine Manufacturers Association encourages the National Park Service to work with the states of Arizona and Utah to develop unified law for the operation of all motorized vessels in the Glen Canyon National Recreation Area should it feel uniformity of the state boating laws is necessary to reduce visitor conflict.

Response: As an element of alternative B (the modified preferred alternative), the National Park Service would work cooperatively with the states of Arizona and Utah in an attempt to develop unified laws for personal watercraft operations within the boundaries of the recreation area.

Public Comment:	*Commenter:*	*Affiliation:*
1176E	National Marine Manufacturers Association	Organization

Alternative C (No Action)

Issue 1: ***Phase Out Two-Stroke Personal Watercraft Engines and Eventually Replace with Four-Stroke Technology***

A *Comment*: I support continued use of personal watercraft on Lake Powell with the long-term goal of eventually replacing two-stroke machines as they end their normal working life with four-stroke replacements and encourage those engaged in business of providing rental units to upgrade to these superior machines as soon as practicable. I oppose any outright ban on personal watercraft use, now, or in the future.

Response: The modified preferred alternative (alternative B) in the *Final Environmental Impact Statement* would require that personal watercraft meet the EPA 2006 emission standards by the end of 2012. Personal watercraft not meeting the standards would no longer be allowed to operate in Glen Canyon National Recreation Area beginning in 2013.

The National Park Service expects that by 2012, most personal watercraft owners would already be in compliance with the 2006 EPA marine engine standards. The impact on visitors as a result of the 2012 ban on carbureted two-stroke personal watercraft use is expected to be small. Personal watercraft manufacturers currently offer models that are compliant with the EPA 2006 standards, and new personal watercraft purchased later than 2006 would already be compliant. The average operating life of a personal watercraft is 5 to 10 years, depending upon the source (see the "General Methodology" section in the "Environmental Consequences" chapter). As a result, it is expected that the majority of noncompliant personal watercraft would no longer be in operation when the engine restrictions proposed under the modified preferred alternative (alternative B) take effect in 2012. The concessioner for the recreation area has already instituted a technology replacement program that replaces carbureted two-stroke engines, including personal watercraft, to engines compliant with the EPA 2006 marine engine emission standards.

Public Comment:	*Commenter:*	*Affiliation:*
312B, 1120C, 1119A		Individual

Alternatives Eliminated

Issue 1: ***Insufficient Justification for Eliminating Alternatives***

A Comment: The *Draft Environmental Impact Statement* states that limiting personal watercraft use to the main channel of Lake Powell reservoir would be, "...inconsistent to the objectives of the recreation area as defined in its enabling legislation. The objectives of the recreation area are to manage the area so that it provides maximum recreational enjoyment to the American public and its guests...." Limiting personal watercraft use to the main channel in no way compromises a visitor's recreational enjoyment. So long as the Park Service provides for this opportunity at a reasonable number of locations, there would be no conflict with the spirit of the enabling legislation.

Response: Alternative B (the modified preferred alternative) currently provides for a three-year pilot study to further evaluate personal watercraft-use areas. Potential restrictions of personal watercraft use in other locations of the recreation area would be evaluated during the pilot study. The purpose of the pilot study and a description of how it would be implemented are provided in appendix C.

Public Comment:	*Commenter:*	*Affiliation:*
1174C	Living Rivers	Organization
1180E		Individuals

Elements Common to All Alternatives

Issue 1: *Lake Management Plan Should be a Component of all Alternatives*

A *Comment*: Given that Glen Canyon national recreation area has already determined there is a "need for a comprehensive Lake Management Plan to more thoroughly explore all water-based recreation" (*Draft Environmental Impact Statement* p. 12), it is not clear why the Lake Management Plan is included only under alternatives B and C. EPA suggests that the National Park Service commit to doing the Lake Management Plan, and include in the *Final Environmental Impact Statement* a more detailed description of how this rule-making differs from the plan and what the plan will cover.

Response: The development of a lake management plan is now a component of all the alternatives analyzed in the *Final Environmental Impact Statement*. Glen Canyon National Recreation Area management has submitted a funding request to develop a lake management plan.

Public Comment:	*Commenter:*	*Affiliation:*
1393Y, 1393S	Environmental Protection Agency	Public Agency
1174F	Living Rivers	Organization
139R		Individual

Environmentally Preferred Alternative/NEPA Sections 101 and 102

Issue 1: ***Alternative B Should Not Be Environmentally Preferred Alternative***

A *Comment*: The National Park Service has designated alternative B as the environmentally-preferred alternative. EPA believes that an alternative that allows only the cleaner personal watercraft engines and/or limits personal watercraft in areas where the soundscapes, wildlife or wilderness qualities in the Natural Zone are impacted, would be environmentally preferred over alternative B in that it balances the recreational use objectives of personal watercraft with the NPS's policies requiring environmental protection. We suggest again further analysis of this in the *Final Environmental Impact Statement*.

Response: Alternative B (the modified preferred alternative) is considered the environmentally preferred alternative because it best meets the six criteria identified in section 101 of the *National Environmental Policy Act*. Alternative B (the modified preferred alternative) provides the best balance between the population and resource use without degradation or risk to health or safety. Under this alternative, the phasing out of carbureted two-stroke personal watercraft engines by 2012 would provide enhanced protection of the recreation area's natural resources while continuing access of personal watercraft operators to the recreation area. The personal watercraft use restrictions identified for the rivers under the modified preferred alternative (alternative B) were identified as areas of known or higher potential for conflict between motorized and nonmotorized users. The development of a lake management plan, supported by information obtained in a three-year pilot study, would allow the National Park Service to further mitigate specific areas in the future where impacts from personal watercraft and other motorized vessels are not consistent with Glen Canyon National Recreation Area goals. Enhanced educational programs that would be developed with implementation of the modified preferred alternative (alternative B) would provide a benefit to all lake users by increasing awareness of regulations pertaining to personal watercraft use and safety. The programs would reduce safety risks and visitor conflicts. Compared to the modified preferred alternative (alternative B), the elimination of personal watercraft use in the recreation area, under alternative C, would not maintain a variety of recreational choices or achieve as great a balance between visitor use and resource use.

Public Comment:	*Commenter:*	*Affiliation:*
1393T	Environmental Protection Agency	Public Agency
1174E	Living Rivers	Organization
1168B	American Canoe Association	Organization
192A, 905K, 905J, 1180R, 1180D		Individual

New Alternatives or Elements

Issue 1: *Additional Strategies for Personal Watercraft Management*

A *Comment*: The *Draft Environmental Impact Statement* does not adequately address strategies for the management of personal watercraft at Glen Canyon National Recreation Area. The *Draft Environmental Impact Statement* leaves much of the strategy and management to a future Lake Management Plan which may or may not be developed depending on the alternative selected. We recommend that the *Final Environmental Impact Statement* analyze reducing noise impacts from personal watercraft in the Natural Zone, or allowing four-stroke engines only to avoid future environmental damage. A commitment to do a Lake Management Plan should be included in the *Final Environmental Impact Statement*, no matter which alternative is selected.

Response: The development of a lake management plan is now a component of all the alternatives analyzed in the *Final Environmental Impact Statement*. Glen Canyon National Recreation Area management has submitted a funding request to develop a lake management plan. Soundscape management will be addressed as a component within the lake management plan so that sound monitoring will be conducted within the recreation area. The "Alternatives" chapter in the *Final Environmental Impact Statement* has been modified to describe the soundscape management study.

Public Comment:	*Commenter:*	*Affiliation:*
1245L	Sierra Club, Utah Chapter	Organization

Issue 2: *Additional Personal Watercraft Restrictions*

A *Comment*: Commenters suggest additional alternatives to restrict personal watercraft to specific areas such as: Wahweap Bay, Warm Creek Bay, the areas near Hall's Crossing and Bullfrog Bay, and the Colorado River from Warm Creek to the Dam (excepting Navajo and Antelope Canyon). At a minimum, restrict their usage to the less remote areas of the lake, e.g. the main channel and certain large bays.

Response: Alternative B (the modified preferred alternative) currently provides for a three-year pilot study to further evaluate personal watercraft-use areas. Potential restrictions of personal watercraft use in other locations of the recreation area would be evaluated during the pilot study. The purpose of the pilot study and a description of how it would be implemented are provided in appendix C.

Public Comment:	*Commenter:*	*Affiliation:*
3B, 87B, 1246B, 386A, 315A, 79B, 84B		Individual

B *Comment*: The areas proposed for personal watercraft restrictions under alternatives A and B are low personal watercraft use areas on Lake Powell. These proposals provide no benefit to the visitor experience in more than 190 other side canyons that are to remain accessible to personal watercrafts. Similar problems with noise and competing uses, which are the primary justification for the presentation of alternative A and B, also occur in Navajo, Antelope, Moqui, Lake, and manhoter canyons. These areas must be given equal consideration in the analysis.

Response: The alternatives were developed based upon the best information available. The area restrictions under alternative B (the modified preferred alternative) on personal watercraft use were identified because of the levels of nonmotorized and passive uses that pose present or potential conflicts. Alternative B currently provides for a three-year pilot study to further evaluate personal watercraft-use areas. Potential restrictions of personal watercraft use in other locations of the recreation area would be evaluated during the pilot study. The purpose of the pilot study and a description of how it would be implemented are provided in appendix C.

Public Comment:	*Commenter:*	*Affiliation:*
1245O, 1245P	Sierra Club, Utah Chapter	Organization
1266A	Sierra Club, Grand Canyon Chapter	Organization
1174 B	Living Rivers	Organization
1194A, 1194B, 1194D, 3A, 3F, 787A, 114B, 193B, 300A, 303A, 767A, 843B, 1088A, 1244B, 1204D, 1513D, 377C, 1177A, 68B, 121D, 156D, 473A		Individual

C *Comment*: One commenter requested restricting personal watercraft access to Rainbow Bridge.

Response: Rainbow Bridge National Monument is a separate unit of the National Park Service. The scope of the *Final Environmental Impact Statement* is on management of personal watercraft within Glen Canyon National Recreation Area. Personal watercraft use at Rainbow Bridge National Monument is currently prohibited under the National Park Service amended regulation that was implemented in March 2000 (36 CFR 3.24 (a), 2000).

Public Comment:	*Commenter:*	*Affiliation:*
1183A		Individual

Issue 3: *Ban Two-Stroke Engines and Allow only Four-Stroke or Direct-Injection Engines*

A *Comment*: Personally, our preference would be to see the ban on all jet skis throughout the entire body of water. Recognizing however, that this is not a wilderness designated area, we would much prefer that the manufacturing industry, its distributors, and the ultimate user be required to move entirely to the purportedly quieter and cleaner four-stroke, direct-injection engines.

Response: If implemented, the modified preferred alternative (alternative B) of the *Final Environmental Impact Statement* would require that personal watercraft meet the EPA 2006 emission standards by the end of 2012. Personal watercraft not meeting the standards would no longer be allowed to operate in Glen Canyon National Recreation Area beginning in 2013.

The National Park Service expects that by 2012, most personal watercraft owners would already be in compliance with the 2006 EPA marine engine standards. The impact on visitors as a result of the 2012 ban on carbureted two-stroke personal watercraft use is expected to be small. Personal watercraft manufacturers currently offer models that are compliant with the EPA 2006 standards, and new personal watercraft purchased later than 2006 would already be compliant. The average operating life of a personal watercraft is 5 to 10 years, depending upon the source (see the "General Methodology" section in the "Environmental Consequences" chapter). As a result, it is expected that the majority of noncompliant personal watercraft would no longer be in operation when the engine restrictions proposed under the modified preferred alternative (alternative B) take effect at the end of 2012.

Public Comment:	*Commenter:*	*Affiliation:*
1245Q	Sierra Club, Utah Chapter	Organization
1118A, 81A, 167B, 148A, 533B, 837B, 369B, 44C, 494B, 139D, 1245Q, 641A, 168A, 1210B		Individuals

Issue 4: *Make Canyons Flat-Wake Zones*

A *Comment*: Commenters suggested restricting speed in narrow canyons or making major canyons flat-wake zones to reduce visitor conflicts.

Response: Under Utah State law, all boaters must operate at flat-wake speeds or idle speed within 150 feet of another boat, a person in or floating on the water, a waterskier (except those being towed), a shore fisherman, a launching ramp, a dock, or a designated swimming area. Arizona State law requires all boaters to operate at flat-wake speeds within 60 feet of another vessel. The modified preferred alternative (alternative B) addresses signing, buoys, and boater education that will enhance other watercraft operators' observance of safe boating practices.

In addition, alternative B (the modified preferred alternative) currently provides for a three-year pilot study to further evaluate personal watercraft-use areas. Potential restrictions of personal watercraft use in other locations of the recreation area would be evaluated during the pilot study. The purpose of the pilot study and a description of how it would be implemented are provided in appendix C.

Public Comment:	*Commenter:*	*Affiliation:*
827C, 674B		Individuals

Issue 5: *New Alternative Incorporating Education, Enforcement, and Stricter Regulations*

A *Comment*: Several comments received indicated that a new alternative should incorporate increased education, strict enforcement, and testing and licensing of personal watercraft operators.

Response: The states of Arizona and Utah mandate the current operational age of personal watercraft users. The licensing of boat or personal watercraft operators rests with the state governments and is not the mandate of the federal government. Currently, the state of Utah provides an extensive and nationally recognized mandatory education program for personal watercraft users. The National Park Service will continue to support this existing program. In addition, the modified preferred alternative (alternative B) would provide enhanced educational materials and programs highlighting personal watercraft issues to distribute to the public and seek funding to increase visitor protection staff.

Public Comment:	*Commenter:*	*Affiliation:*
68C, 130D, 138B, 155B, 200B, 444A, 909A, 7D, 158A, 1196D		Individuals

Issue 6: *Consider Wilderness in the Analysis of Personal Watercraft Management*

A *Comment*: Half of the recreation area shoreline which is managed as wilderness should be given special consideration in the Environmental Impact Statement. This should include restrictions of personal watercraft where they are likely to impair the wilderness experience of Glen Canyon National Recreation Area visitors. Alternatives A and B are both likely to adversely impact the qualities of solitude and a natural ambience for these wilderness areas. The National Park Service must seek an alternative which recognizes the importance of wilderness lands and manages those lands appropriately.

Response: The Natural Zone portion of the Lake Powell shoreline when the lake is full (3,700 feet in elevation) equals 712 miles. Sound from personal watercraft use on the lake would impact wilderness values of solitude and natural quiet, as it would carry beyond the shoreline itself and be heard at some distance within the Natural Zone. The sound could be heard up to a maximum of 2 miles from the source over a flat surface, but the topography surrounding Lake Powell is not flat. Assuming that a natural barrier to the sound would exist where there is an elevation change of 50 feet (approximate height of a five-story building) approximately 16,000 acres would be affected (between 3,700 and 3,750 feet in elevation). This equals 2.3% of the Natural Zone (668,670 acres). Time of day and season of use would also reduce actual impacts on visitors in the Natural Zone, because the sound would not be continuous, would be encountered only during daylight hours, and would be minimal between October and May.

Although noise does intrude on desired wilderness and Natural Zone soundscape values, the inescapable juxtaposition of the Natural Zone and the Recreation and Resource Utilization Zone make it impossible to avoid all adverse impacts on the Natural Zone/wilderness soundscape. As shown above, only 2.3% of the Natural Zone's area would be affected, and those soundscape effects would be offset even further by diurnal/nocturnal and seasonal reductions in watercraft noise.

There is a potential conflict in the management objectives between the Recreation and Resource Utilization Zone and the Natural Zone that is extremely difficult to avoid because the zones are adjacent to each other. However, the percentage of the Natural Zone that is adversely affected by personal watercraft noise, as shown in the preceding paragraph, is small. The noise generated by watercraft in the Recreation and Resource Utilization Zone, including personal watercraft, is consistent with Glen Canyon National Recreation Area's enabling legislation ". . . to provide for public outdoor recreation use and enjoyment of Lake Powell and the lands adjacent thereto." See the "Soundscape" section in the "Environmental Consequences" chapter for a description of the methodology used to assess impacts on soundscape in the Natural Zone.

The preparation of a lake management plan, is now included under all alternatives in the *Final Environmental Impact Statement*, would provide an opportunity for the National Park Service to further evaluate impacts of all lake users on all resources, including soundscape. Alternative B (the modified preferred alternative) currently provides for a three-year pilot study to further evaluate personal watercraft use areas. Potential restrictions of personal watercraft use in other locations of the recreation area would be evaluated during the pilot study. The purpose of the pilot study and a description of how it would be implemented are provided in appendix C.

Public Comment:	*Commenter:*	*Affiliation:*
1245N, 1245J	Sierra Club, Utah Chapter	Organization

Issue 7: *Reconsider Personal Watercraft use Restriction on the Rivers*

A Comment: Both upstream and downstream travel can be allowed on certain times of the year. With appropriate guidelines, the rivers are an extremely safe and enjoyable path for personal watercraft users. Please reconsider the river restrictions as well.

Response: Alternative A, which allows for the continuation of current conditions, restricts personal watercraft travel upstream in the San Juan, Escalante, Colorado, and Dirty Devil Rivers at locations similar to those under alternative B (the modified preferred alternative). See table 4 for specific restrictions. The management actions under the modified preferred alternative (alternative B), for the San Juan, Escalante, Colorado, and Dirty Devil Rivers, would additionally restrict travel downstream on the same stretches of river as alternative A. Access would also be restricted in both directions on 10 additional miles of the Dirty Devil River and 23 miles on the Colorado River. Based on the best available information, the National Park Service would implement these restrictions on the rivers to reduce visitor conflicts with river rafters, fishermen, and backcountry hikers; promote visitor enjoyment; and ensure visitor safety.

Public Comment:	*Commenter:*	*Affiliation:*
854C		Individual

Issue 8: *Permit Personal Watercraft that Meet a "Quiet Standard"*

A Comment: . Perhaps allowing "quiet standard" personal watercraft to operate in areas that may presently be restricted in the proposed plan because of noise considerations, would be an option.

Response: Alternative B (the modified preferred alternative) currently provides for a three-year pilot study to further evaluate personal watercraft-use areas. Potential restrictions of personal watercraft use in other locations of the recreation area would be evaluated during the pilot study. The purpose of the pilot study and a description of how it would be implemented are provided in appendix C.

Public Comment:	*Commenter:*	*Affiliation:*
383E		Individual

Issue 9: *Inadequate Range of Alternatives*

A Comment: Selection of alternative B provides no significant benefit, except to areas at the extreme ends of the tributaries where there is no significant visitation, (and now no access). Additional alternatives are available that allow personal watercraft's access to enjoy Lake Powell without destroying the experience of other users.

Response: The NPS *Director's Order 12: Conservation Planning, Environment Impact Analysis and Decision-Making* (NPS 2001b) states that a full range of alternatives must be examined, and that ". . . the alternatives carried forward for analysis must meet project objectives to a large degree, although not necessarily completely." The National Park Service believes the *Draft* and *Final Environmental Impact Statements* contain a reasonable range of alternatives under this definition.

Public Comment:	*Commenter:*	*Affiliation:*
3F		Individual

B Comment: The American Canoe Association does not believe that the *Draft Environmental Impact Statement* provides an adequate range of alternatives. An alternative that specifically limits personal watercraft use to the large, wide open portions of Lake Powell and prohibits personal watercraft use from a greater portion of the lake's narrow coves and canyons is needed. Also, none of the alternatives offer a shoreline buffer adequate to protect other waterway users and wildlife from the safety hazards and disruption associated with personal watercraft use. The *Draft Environmental Impact Statement* simply fails to represent a full spectrum of reasonable options.

Response: The NPS *Director's Order 12: Conservation Planning, Environment Impact Analysis and Decision-Making* (NPS 2001b) states that a full range of alternatives must be examined, and that ". . . the alternatives carried forward for analysis must meet project objectives to a large degree, although not necessarily completely." The National Park Service believes the *Draft* and *Final Environmental Impact Statements* contain a reasonable range of alternatives under this definition.

In addition, the modified preferred alternative (alternative B) provides for a three-year pilot study to further evaluate personal watercraft-use areas. Potential restrictions of personal watercraft use in other locations of the recreation area would be evaluated during the pilot study. The purpose of the pilot study and a description of how it would be implemented are provided in appendix C.

Public Comment:	*Commenter:*	*Affiliation:*
1168A	American Canoe Association	Organization

General Comments

Issue 1: ***Request to Add Letters to Administrative Record***

A *Comment*: Why did the plan not recognize the thousands of public comments received on the NPS personal watercraft rulemaking opposing continued use of these vessels in units of the National Park Service. We request that the 30,000 Citizen letters be added to the administrative record as supporting a personal watercraft ban at the Glen Canyon National Recreation Area. In addition, we ask that the National Park Service please include all of Bluewater Network's previous letters and correspondences sent to Glen Canyon concerning personal watercraft activity in the administrative record for the general evaluation of personal watercraft use.

Response: The "Methodology and Purpose" section at the beginning of this volume 2 provides a detailed explanation of how public comments were received, reviewed, and ultimately responded to in this document. The criteria for determination of substantive comments is found in CEQ regulations (1503.4 CFR) and amplified in *Director's Order 12: Conservation Planning, Environmental Impact Analysis, and Decision Making* (section 4.6 (B)). Public comments, as well as other factors, were used by Glen Canyon National Recreation Area to modify the "preferred alternative" (alternative B) that was analyzed in the *Draft Environmental Impact Statement*. A description of the modified preferred alternative (alternative B) is found in the "Alternatives" chapter.

The National Park Service acknowledges the 30,000 citizen comments submitted on the NPS personal watercraft rulemaking. The *Draft* and *Final Environmental Impact Statements* contain analyses for the continuation of and banning of personal watercraft use at the recreation area through the various impact topics. The controversy regarding personal watercraft use in park units is summarized in the "Personal Watercraft Use Regulatory Background" section in the "Purpose of and Need for Action" chapter.

Public Comment:	*Commenter:*	*Affiliation:*
1002M, 1002N	Bluewater Network	Organization

Issue 2: ***Jet Ski and Boat Users Should Have Been Notified about Proposed Personal Watercraft Management at Glen Canyon***

A *Comment*: Why were registered jet skiers not notified of the plan to manage personal watercraft at Glen Canyon National Recreation Area? The government has access to the owners of jet skis and boats because of registration requirements. Outreach for public comment should have extended beyond the local area.

Response: In accordance with requirements of the National Environmental Policy Act, the National Park Service provided notices to the public on numerous occasions and opportunities for the public to comment on the *Draft Environmental Impact Statement*. A notice of intent to prepare an environmental impact statement was published in the *Federal Register* in August 2001. Public scoping workshops were held in August of 2001 in Salt Lake City, UT; Phoenix, AZ; and Page, AZ. In September 2002 the *Draft Environmental Impact Statement* was made available to the public and a notice of availability was published in the *Federal Register*. The *Draft Environmental Impact Statement* was sent to interested parties that were on the mailing list compiled from attendees at meetings and from written comments received at the recreation area. In addition the document was available on the recreation area website, and hard copies of the document were available on request. Public meetings were held in October 2002 to provide an opportunity for the public to comment on the *Draft Environmental Impact Statement*. The National Park Service has been diligent in keeping the public involved in the planning process through public meetings and news releases, and by posting information on the internet.

Public Comment:	*Commenter:*	*Affiliation:*
1133F, 1134F, 608A		Individuals

CULTURAL RESOURCES

Impacts from Visitor Access and Other Watercraft

Issue 1: ***Access to Areas of Cultural Significance Should be Restricted***

A Comment: The *Draft Environmental Impact Statement* notes that the recreation area's geographic features and natural landscape are considered sacred to Native Americans. The National Park Service identifies a potential concern that the ability of personal watercraft operators to access remote areas of Glen Canyon National Recreation Area unit could intrude on traditional tribal activities and make certain cultural sites vulnerable to trampling, looting, and vandalism.

The *Draft Environmental Impact Statement* does not document any instances where these problems have occurred. Nor is there any reason to believe that personal watercraft users are more likely to pose these concerns than canoeists, kayakers, hikers, or others who might access these same areas. Even so, alternative B proposes to prohibit personal watercraft use in several areas to protect against potential adverse impacts on these resources.

Response: Navajo practitioners conduct traditional activities as individuals, and generally do not share this information with others. Almost universally, American Indians are extremely reticent to share sensitive information about personal religious activities with the public. Out of respect for these traditional beliefs, and in keeping with various laws and mandates, the National Park Service does not include descriptions of specific traditional activities or their locations in a public document. For these reasons, Glen Canyon National Recreation Area does not have documentation of specific instances where personal watercraft users have intruded on traditional activities by tribal practitioners. However, the National Park Service is aware of the potential for conflicts with visitor use along the shorelines, particularly in more isolated areas.

Public Comment:	*Commenter:*	*Affiliation:*
1344V	Personal Watercraft Industry Association	Organization

B *Comment*: The restrictions on personal watercraft use proposed under alternative B should help to protect cultural resources and activities from intrusion. There is no legitimate reason, however, for National Park Service to impose these restrictions on personal watercraft users only.

Response: The plan was not designed to determine if personal watercraft caused more environmental damage to park resources than other boats, but rather, to determine if personal watercraft use was consistent with Glen Canyon National Recreation Area's enabling legislation and management goals and objectives. The overall objective is to meet the terms of the settlement agreement with Bluewater Network (see the "Introduction" in the "Purpose of and Need for Action" chapter). An analysis was done on the management of personal watercraft in order to meet the terms of the settlement agreement between Bluewater Network and the National Park Service. With completion of this *Final Environmental Impact Statement*, the National Park Service may either take action to adopt special regulations to manage personal watercraft use at Glen Canyon, or may choose to discontinue personal watercraft use.

Public Comment:	*Commenter:*	*Affiliation:*
1344V	Personal Watercraft Industry Association	Organization

GENERAL ASSUMPTIONS USED FOR ANALYSIS

Personal Watercraft Use Trends and Assumptions

Issue 1: ***Unsubstantiated Personal Watercraft Use Assumption***

A Comment: Throughout the *Draft Environmental Impact Statement* there are references to alternative C which state "by the end of the ten-year analysis period, most former personal watercraft users would have returned to the recreational area with other motorized watercraft." This unsubstantiated conclusion is used to support the supposition that implementing alternative C would not significantly affect air quality, water quality, noise, visitor experience, etc. over the medium to long term. The *Draft Environmental Impact Statement* contains no data or analysis to back-up this prediction. Permanently banning personal watercraft use does not necessarily mean that powerboat and houseboat groups which use personal watercraft will use an additional vessel, merely that they will have one less recreational activity associated with their time on Lake Powell reservoir. While many of these users will continue to take part in motorized reservoir activities, there is no data or analysis presented for why these groups will necessarily incorporate additional watercraft to replace personal watercraft. Nor is there any evidence to suggest that there would be a one-to-one relationship over time to the replacement of personal watercraft lost with other vessels. Lastly, there is also no evidence to support that the small percentage of groups that only use personal watercraft will use the reservoir at all, given that their preferred activity is permanently banned. A much more likely scenario is that any change in motorized use on the reservoir will occur at a pace consistent with current trends, regardless of personal watercraft use.

Response: The text was modified in the *Final Environmental Impact Statement* to show the results of the analysis of use trends within units of the national park system compared to use trends within Glen Canyon National Recreation Area. For all alternatives, the *Final Environmental Impact Statement* uses a visitor use forecast of –2% and +2% average annual change to 2012. The rationale for expected use trends that would follow a ban on personal watercraft has been revised in the *Final Environmental Impact Statement* under the "Visitor Use and Experience" section, in the "Environmental Consequences" chapter. The analysis in the *Final Environmental Impact Statement* carries forward the assumption from the *Draft Environmental Impact Statement* that, following a ban on personal watercraft the total number of watercraft operating hours on the lake would be decreased in the short-term. This is substantiated by public comments received from personal watercraft users stating that they would not choose to visit the recreation area if personal watercraft were banned. Based on national park system use trends, it is assumed however that total watercraft operating hours under alternative C would recover by 2012 to use levels similar to the range predicted under alternatives A and B. This would be due to either natural growth in visitation (assuming a 2% annual increase in use) or increased visitation by individuals who previously avoided the recreation area because of personal watercraft and who would then choose to visit if personal watercraft were absent. This assumption is substantiated by public response by non-personal watercraft users who commented during the public review period that they would visit the recreation area if personal watercraft were banned.

Public Comment:	*Commenter:*	*Affiliation:*
1174A	Living Rivers	Organization

B Comment: Only alternative C prohibits water pollution with fuel discharged into the reservoir from the two stroke engines currently used in manufacturing personal watercraft. The *Draft Environmental Impact Statement* notes other laws require the fleet of watercraft manufactured after 2006 should include at least 75% of watercraft meet low emission standards. The *Draft Environmental Impact Statement* states that 12% of personal watercraft used on the reservoir already complied with low emission standards. The projection of rapidly progressing towards cleaner personal watercraft in the Glen Canyon National Recreation Area seems hopelessly optimistic. The manufacturing of lower emission personal watercrafts does not necessarily equate with higher usage of low emission personal watercrafts in any particular location. In fact locations which do not tightly restrict the use of two stroke engines may be burdened with an over representation of the polluting personal watercrafts.

Response: If implemented, the modified preferred alternative (alternative B) in the *Final Environmental Impact Statement* would require that personal watercraft meet the EPA 2006 emission standards by the end of 2012. Personal watercraft not meeting the standards would no longer be allowed to operate in Glen Canyon National Recreation Area beginning in 2013.

The National Park Service expects that by 2012, most personal watercraft owners would already be in compliance with the 2006 EPA marine engine standards. The impact on visitors as a result of the 2012 ban on carbureted two-stroke personal watercraft use is expected to be small. Personal watercraft manufacturers currently offer models that are compliant with the EPA 2006 standards, and new personal watercraft purchased later than 2006 would already be compliant. The average operating life of a personal watercraft is 5 to 10 years, depending upon the source (see the "General Methodology" section in the "Environmental Consequences" chapter). As a result, it is expected that the majority of noncompliant personal watercraft would no longer be in operation when the engine restrictions proposed under the modified preferred alternative (alternative B) take effect in 2012.

Public Comment:	*Commenter:*	*Affiliation:*
1245M	Sierra Club, Utah Chapter	Organization

OTHER NEPA ISSUES

General Comments

Issue 1: *The National Park Service Is Headed for a Predetermined Outcome*

A *Comment*: Commenters are concerned that the NPS' review of personal watercraft and their impact upon Glen Canyon resources is directed toward a predetermined outcome. In particular, they believe the National Park Service has already rejected alternative C, the no-action alternative, and regardless of the environmental impact discovered during the environmental impact statement process, personal watercraft will be authorized at Glen Canyon. Materials released to the public, as well as NPS statements to the press have led to this conclusion.

Response: The CEQ regulations, which implement the *National Environmental Policy Act (NEPA) of 1969*, define the "preferred alternative" as the agency's preferred course of action at the time a draft environmental impact statement is released for public review (1502.14(e), 40 Questions, 4(a)). The National Environmental Policy Act is designed as a planning process that is used for public disclosure of the range of reasonable alternatives, the consequences of those alternatives, and the agency's proposed course of action at the time the draft environmental impact statement is released. The NEPA process also provides opportunities for public comment on the proposed alternatives and analysis. The *Draft* and *Final Environmental Impact Statements* contain a full disclosure of impacts associated with discontinued use of personal watercraft at the recreation area. Disclosing the proposed preferred alternative in the draft environmental impact statement, or in the course of public scoping, does not mean the agency would necessarily implement that alternative. Rather, it merely gives the public an opportunity to comment on the preferred alternative (along with other alternatives proposed), to suggest other alternatives and mitigation measures, and to present information or data to help the agency in its subsequent decision making. This *Final Environmental Impact Statement* contains a "modified preferred alternative" (alternative B) that reflects changes and edits in response to public input, among other factors, received during the public comment period on the *Draft Environmental Impact Statement*. The final decision on the alternative that will be implemented will be contained in the Record of Decision that will be available no sooner than 30 days after the Environmental Protection Agency publishes the Notice of Availability of the *Final Environmental Impact Statement* in the *Federal Register*.

Public Comment:	*Commenter:*	*Affiliation:*
1002R	Bluewater Network	Organization
3E		Individual

Issue 2: *The Draft Environmental Impact Statement Fails to Complete the Requirements of National Environmental Policy Act for Completing an Environmental Impact Statement*

A *Comment*: The current *Draft Environmental Impact Statement* fails to meet the requirements of NEPA in several ways. In preparing an environmental impact statement the National Park Service must "provide full and fair discussion of significant environmental impacts and shall inform decision makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment" 40 CFR Sec 1502.1 (emphasis added). The *Draft Environmental Impact Statement* fails to meet the standards required by NEPA for completing an environmental impact statement and for this reason the *Draft Environmental Impact Statement* should be withdrawn and a new *Draft Environmental Impact Statement* with a reasonable set of alternatives should be proposed.

Response: The NPS *Director's Order 12* states that a full range of alternatives must be examined and that "the alternatives carried forward for analysis must meet project objectives to a large degree, although not necessarily completely." The National Park Service believes the *Draft* and *Final Environmental Impact Statements* contain a reasonable range of alternatives under this definition. Objectives were developed, in part, from the recreation area's enabling legislation.

Public Comment:	*Commenter:*	*Affiliation:*
1245S	Sierra Club, Utah Chapter	Organization

Issue 3: *Inclusion of Mitigation Measures with Alternatives per NEPA and CEQ Requirements*

A Comment: This *Draft Environmental Impact Statement* does not include examples of best management practices to avoid or reduce pollution to the recreation area. We encourage you to use all available practices to meet the intent of guidance issued by the Council on Environmental Quality (CEQ) integrating pollution prevention opportunities in NEPA planning, documents and decisions (Pollution Prevention and the National Environmental Policy Act, CEQ, January 1993). Pertinent provisions of executive orders should be addressed in the *Final Environmental Impact Statement* and the future Lake Management Plan referenced in this rule-making.

Response: Each impact topic contains a summary of the applicable laws and regulations that were applied in the analysis of the effects of personal watercraft on Glen Canyon National Recreation Area resources and values.

The NPS Hazardous Waste Management and Pollution Prevention Team have developed a *Spill Prevention Control and Countermeasures Plan* (NPS 1998c) that provides recommendations and requirements to prevent environmental damage resulting from the spills of oil. These plans are required by the Environmental Protection Agency as stated in 40 CFR, Part 112. All marina operators and National Park Service must comply with these requirements and *Best Management Practices*. The National Park Service manages the water of Lake Powell in accordance with the water quality standards of Arizona and Utah. Water quality in Lake Powell is regulated by the Arizona and Utah Departments of Environmental Quality under water quality standards and regulations that are promulgated in the *Arizona Administrative Code* (R18-11-107) and *Utah Administrative Code* (R317-2), respectively. Consistent with federal regulations, Arizona and Utah have established numerical and narrative standards that protect existing and designated uses of state waters and implement the antidegradation requirements. Compliance with the numerical standards for water quality is determined at control points that are specified in the regulations.

In the case of the *Draft* and *Final Environmental Impact Statements*, three alternatives for personal watercraft management were analyzed. The alternatives also consider means to mitigate the effects of personal watercraft on park resources and values, including limiting use in areas where management objectives strive to create a visitor experience without intrusion of these vessels or where important park resources must be protected. The modified preferred alternative (alternative B) in the *Final Environmental Impact Statement* includes mitigation measures to protect other park users from potential conflicts with personal watercraft (refer to the modified preferred alternative section in the "Environmental Consequences" chapter, as well as other measures to protect species of special concern and water and air resources). Phasing out of carbureted two-stroke personal watercraft at the end of 2012 under the modified preferred alternative (alternative B) would further mitigate impacts of these vessels on recreation area resources. The National Park Service finds that the modified preferred alternative, if implemented, including the provision for continued personal watercraft use, would not result in an impairment of park resources and values for which the Glen Canyon National Recreation Area was established.

Public Comment:	*Commenter:*	*Affiliation:*
1393AA	Environmental Protection Agency	Public Agency

PURPOSE AND NEED

Current Personal Watercraft Regulatory Framework

Issue 1: ***Compliance with Bluewater Network Court Settlement***

A Comment: The draft environmental impact statement does not comply with the court settlement agreement between the National Park Service and Bluewater Network regarding the analysis of effect personal watercraft have on recreation area resources. It appears that in several instances in the draft environmental impact statement, the National Park Service has overlooked relevant information, reached baseless conclusions, submitted contradictory information, and not conducted current site-specific studies of personal watercraft impacts, thereby violating this agreement.

Response: A summary of the NPS rulemaking process and associated personal watercraft litigation is contained under "Personal Watercraft Regulatory Framework" in the "Purpose of and Need for Action" chapter. The National Park Service believes it has complied with the court order and has assessed the impacts of personal watercraft on those resources specified by the judge, as well as other resources that could be affected. These analyses were done for every applicable impact topic with the best available data, as required by the CEQ regulations (40 CFR 1502.22). Where data was lacking, best professional judgment prevailed using assumptions and extrapolations from scientific literature, other park units where personal watercraft are used, and personal observations of park staff.

Public Comment:	*Commenter:*	*Affiliation:*
1002S	Bluewater Network	Organization
1168H	American Canoe Association	Organization

Issue 2: ***Prescribing Personal Watercraft Use under the Superintendent's Compendium Was Appropriate***

A Comment: We disagree with certain special interest groups' assertion that the NPS' personal watercraft Final Rule was "arbitrary and capricious." We believe the enabling legislation of Glen Canyon specifically supports the use of all forms of watercraft and that the National Park Service was well within its realm of authority in prescribing personal watercraft use within the context of the Superintendent's Compendium.

Response: The settlement agreement and the final personal watercraft rule did not supercede or overturn Glen Canyon's enabling legislation. Both the personal watercraft settlement agreement (described in "Personal Watercraft Use Regulatory Background" in the "Purpose of and Need for Action" chapter) and the authorizing legislation for Glen Canyon were considered when developing alternatives for this environmental impact statement.

The "Introduction" section in the "Purpose of and Need for Action" chapter states that the overall objective for the plan is to evaluate a range of alternatives and strategies to manage personal watercraft with the goal of ensuring protection of recreation area resources and values. This objective was derived from the enabling legislation for Glen Canyon National Recreation Area. As further stated in this section, an analysis on the management of personal watercraft is provided under each alternative to meet the terms of the settlement agreement between the Bluewater Network and the National Park Service. As a result, the alternatives presented in the *Draft* and *Final Environmental Impact Statements* protect resources and values while providing recreational opportunities at Glen Canyon National Recreation Area. As required by the settlement agreement and NPS *Management Policies*, the impacts associated with personal watercraft and other recreational uses are evaluated under each alternative (refer to the "Environmental Consequences" chapter) to determine the potential for impairment to park resources. The National Park

Service finds that the modified preferred alternative (alternative B), including the provision for personal watercraft use, would not result in impairment of park resources and values for which the Glen Canyon National Recreation Area was established. Thus, by ensuring resources are protected for future generations, the National Park Service is representing the interests of the general public.

Public Comment:	*Commenter:*	*Affiliation:*
1178B	ARAMARK	Business
830E		Individual

NPS Interpretation of Impairment Policies & Mandates

Issue 1: ***Compliance with NPS Director's Orders***

A *Comment*: The National Parks Omnibus Management Act requires the National Park Service to base its resource management decisions upon scientific and technical information. Moreover, *Director's Order 12* (DO 12) says that if such information cannot be obtained, the National Park Service will modify a proposed action "to eliminate the action causing the unknown or uncertain impact or other alternatives will be selected." DO 12 also states that when it is not possible to eliminate an activity with unknown or uncertain potential impacts, the National Park Service will provide background on the completeness of such information, the relevance of missing information, a summary of adverse impacts, and an evaluation of those impacts.

It appears that the National Park Service at Glen Canyon has concluded that much information regarding personal watercraft use is too expensive and/or impossible to collect. The National Park Service determination at Glen Canyon that personal watercraft cannot be eliminated from the preferred alternative runs counter to the actions at dozens of parks across the country that have prohibited these machines. Bluewater Network believes that a proper reading of the stipulations in DO 12 requires the National Park Service to choose an alternative which eliminates personal watercraft operation.

Response: A summary of the NPS rulemaking process and associated personal watercraft litigation is contained under "Personal Watercraft Regulatory Framework" in the "Purpose of and Need for Action" chapter. The National Park Service believes it has complied with the court order and has assessed the impacts of personal watercraft on those resources specified by the judge, as well as other resources that could be affected. These analyses were done for every applicable impact topic with the best available data, as required by CEQ regulations (40 CFR 1502.22). Where data was lacking, best professional judgment prevailed using assumptions and extrapolations from scientific literature, other park units where personal watercraft are used, and personal observations of park staff.

Regarding compliance with *Director's Order 12*, the order states that a full range of alternatives must be examined and that "the alternatives carried forward for analysis must meet project objectives to a large degree, although not necessarily completely." The National Park Service believes the *Draft* and *Final Environmental Impact Statements* contain a reasonable range of alternatives under this definition.

In the case of the *Draft* and *Final Environmental Impact Statements*, three alternatives were analyzed under various personal watercraft scenarios. The alternatives also consider means to mitigate the effects of personal watercraft on park resources and values, including limiting use in areas where management objectives strive to create a visitor experience without intrusion of these vessels or where important park resources must be protected. The modified preferred alternative (alternative B) in the *Final Environmental Impact Statement* includes mitigation measures to protect other park users from potential conflicts with personal watercraft (refer to the discussion for the modified preferred alternative [alternative B] in the "Environmental Consequences" chapter, as well as other measures to protect species of special concern and water and air resources).

The National Park Service finds that implementation of the modified preferred alternative (alternative B) presented in the *Final Environmental Impact Statement* (including the provision for continued personal watercraft use) would not result in an impairment of park resources and values for which the Glen Canyon National Recreation Area was established.

Public Comment:	*Commenter:*	*Affiliation:*
1002Q	Bluewater Network	Organization

Issue 2: ***Continued Personal Watercraft Use is in Violation of Federal Laws and Policies***

A Comment: Several comments were received citing the *Organic* and *Redwood Acts* and the mission of the National Park Service to leave the resources and wildlife "unimpaired for future generations." A number of letters were received stating federal law clearly prohibits activities that impair or derogate the recreation area resources.

Response: The "Summary of Laws and Policies" section in the "Environmental Consequences" chapter summarizes the three overarching laws that guide the National Park Service in making decisions concerning protection of park resources. These laws, as well as others, are also reflected in the NPS *Management Policies*. An explanation of how the Park Service applied these laws and policies to analyze the effects of personal watercraft on Lake Powell resources and values can be found under "Impairment Analysis" in the "Methodology" section of the "Environmental Consequences" chapter. An impairment to a particular park resource or park value must rise to the magnitude of a major impact, as defined by its context, duration, and intensity and must also affect the ability of the National Park Service to meet its mandates as established by congress in Glen Canyon National Recreation Area's enabling legislation. For each resource topic, the *Final Environmental Impact Statement* establish thresholds or indicators of magnitude of impact. An impact approaching a "major" level of intensity is one indication that impairment could result. For each impact topic, when the intensity approached "major," the interdisciplinary planning team would consider mitigation measures to reduce the potential for "major" impacts, thus reducing the potential for impairment. In response to growing concern regarding potential impacts of personal watercraft use, the National Park Service began an extensive review and regulation process. While comments were received opposing continued use of personal watercraft within units of the Park Service, other comments supported its use, under certain conditions designed to protect park resources and values. Recognizing that some units needed to complete more local planning and analyses of impacts, the final servicewide personal watercraft regulation allowed for local decision making on a park-by-park basis.

Both the servicewide regulation and subsequent court settlement between the Bluewater Network and National Park Service acknowledged that park units proposing to continue personal watercraft use must complete an analysis of impacts, including a thorough analysis of the enabling legislation, its management objectives, and Glen Canyon National Recreation Area resources and values potentially affected by continued use. While public comment on continued personal watercraft use is considered, it is done so while also taking into account these other factors.

In the case of the *Draft* and *Final Environmental Impact Statements*, three alternatives were analyzed under various personal watercraft scenarios. The alternatives also consider means to mitigate the effects of personal watercraft on park resources and values, including limiting use in areas where management objectives strive to create a visitor experience without intrusion of these vessels or where important park resources must be protected. The modified preferred alternative (alternative B) in the *Final Environmental Impact Statement* includes mitigation measures to protect other park users from potential conflicts with personal watercraft (refer to the discussion for alternative B in the "Environmental Consequences" chapter, as well as other measures to protect species of special concern and water and air resources).

The National Park Service finds that the modified preferred alternative (alternative B) presented in the *Final Environmental Impact Statement* (including the provision for continued personal watercraft use) would not result in an impairment of park resources and values for which the Glen Canyon National Recreation Area was established.

Public Comment:	*Commenter:*	*Affiliation:*
1174D	Living Rivers	Organization
1002O	Bluewater Network	Organization

watercraft or other outboard engines would be potentially toxic to aquatic organisms or humans. Using the estimated threshold volumes, the surface area of the minimum lake pools, and the chemicals identified, it is possible to identify unacceptable risks to human health or the environment. There are a limited number of EPA criteria for the protection of human health (via ingestion of water and aquatic organisms or ingestion of aquatic organisms only). Chronic ecotoxicological and human health benchmarks for contaminants were acquired from various sources. The evaluation presents the most restrictive thresholds for the pollutants, based on both federal and state water quality standards.

The modified preferred alternative (alternative B) in the *Final Environmental Impact Statement* includes mitigation measures to further protect park resources. Under the modified preferred alternative, personal watercraft engines would be 100% compliant after 2012, which will further reduce petroleum-related pollution. Based on the analysis presented, the National Park Service finds that, if implemented, the modified preferred alternative (alternative B) presented in the *Final Environmental Impact Statement* (including the provision for continued personal watercraft use) would not result in an impairment of park water quality.

Public Comment:	*Commenter:*	*Affiliation:*
139C		Individual

Park Legislation/Authority

Issue 1: *Restricting Personal Watercraft Conflicts with Agency's Mandate to Maximize Recreational Use*

A *Comment*: Alternative C, the No Action, banning personal watercraft, is in direct contradiction to Public Law 92-593, which established Glen Canyon National Recreation Area in 1972, and its general management plan NPS 1978a.

Response: The settlement agreement between Bluewater Network and the National Park Service did not supercede or overturn any legislation. Both the personal watercraft settlement agreement (described in "Personal Watercraft Use Regulatory Background" in the "Purpose of and Need for Action" chapter) and the authorizing legislation for Glen Canyon National Recreation Area were considered when developing alternatives to be analyzed in the *Draft* and *Final Environmental Impact Statements*.

The "Introduction" section in the "Purpose of and Need for Action" chapter states that the overall objective for the plan is to evaluate a range of alternatives and strategies to manage personal watercraft use, with the goal of ensuring protection of recreation and resource values. This objective was derived from the enabling legislation for Glen Canyon National Recreation Area. As further stated in this section, a special analysis on the management of personal watercraft was also provided under each alternative to meet the terms of the settlement agreement between the Bluewater Network and the National Park Service.

As a result, the alternatives presented in the *Draft* and *Final Environmental Impact Statements* protect resources and values while providing recreational opportunities at Glen Canyon National Recreation Area. As required by the settlement agreement and NPS *Management Policies*, the impacts associated with personal watercraft and other recreational uses are evaluated under each alternative (refer to the "Environmental Consequences" chapter) to determine the potential for impairment to park resources. The National Park Service finds that the modified preferred alternative (alternative B), which allows for personal watercraft use, would not result in impairment of park resources and values for which the Glen Canyon National Recreation Area was established. Thus, by ensuring resources are protected for future generations, the National Park Service is representing the interests of the general public.

Public Comment:	*Commenter:*	*Affiliation:*
170D		Individual

Issue 2: *Restricting Personal Watercraft Conflicts with Agency's Mandate to Maximize Recreational Use*

A *Comment*: Alternative B would deny operators of personal watercraft access to the important areas of the full pool shoreline of Lake Powell. In times of low lake level, much of the 25-mile section of the Colorado River channel proposed for closure is flowing water that provides a novel and unparalleled experience for personal watercraft users. This conflicts with the agency's mandate to maximize recreational use of the recreation area.

Response: Under low water conditions, such as those that presently exist, it is almost impossible to go upstream in a personal watercraft. The channel is meandering, muddy, and unsafe. It is neither appropriate nor realistic for personal watercraft use to be allowed under those conditions.

Public Comment:	*Commenter:*	*Affiliation:*
1239M	Utah Shared Access Alliance	Organization

Issue 3: *Protection of Resources under the Recreation Area's Enabling Legislation and General Management Plan*

A *Comment*: Glen Canyon's enabling legislation states that the area was established to "Provide for public outdoor recreation use and enjoyment of Lake Powell and lands adjacent thereto in the States of Arizona and Utah and to preserve the scenic, scientific, and historic features contributing to public enjoyment of the area" (PL 92-593). The natural soundscape, the aquatic environment, and the solitude of many of Lake Powell's canyons are critical components of the scenic, scientific, and historic features that National Park Service must protect.

Response: NPS *Management Policies* for soundscapes (section 4.9), as stated in *Management Policies*, require superintendents to "identify what levels of human-caused sound can be accepted within the management purposes of parks. The sound considered acceptable will vary throughout Glen Canyon National Recreation Area, being generally greater in developed areas and generally lesser in undeveloped areas . . .. The service will take action to prevent or minimize all noise that . . . exceeds levels that have been identified as being acceptable to, or appropriate for, visitor uses at the sites being monitored." *Management Policies for Visitor Use* (section 8.2) indicate that unless mandated by statute, the National Park Service will not allow visitors to conduct activities that would unreasonably interfere with the atmosphere of peace and tranquility, or the natural soundscape maintained in wilderness and natural, historic, or commemorative locations within Glen Canyon National Recreation Area.

As written in its enabling legislation, the management purpose of Glen Canyon National Recreation Area is to provide public recreation, benefit, and use in a manner that will preserve, develop, and enhance, so far as practicable, the recreation potential and preserve the scenic, historic, scientific, and important features of the area. Various levels of sound are associated with some of those uses, such as boating and personal watercraft, and are consistent with Glen Canyon National Recreation Area's purpose as defined by its enabling legislation.

To provide a "peaceful and tranquil" experience in some locations, personal watercraft use would be prohibited. These prohibitions or restrictions would provide for a peaceful and tranquil visitor experience. All alternatives include plans and policies for enforcement of noise regulations. These elements, which are contained in this *Final Environmental Impact Statement*, are consistent with NPS *Management Policies* for soundscapes. As required by the settlement agreement and NPS *Management Policies*, the impacts associated with personal watercraft and other recreational uses are evaluated under each alternative (refer to the "Environmental Consequences" chapter) to determine the potential for impairment to park resources. The National Park Service finds that the modified preferred alternative (alternative B), which allows for personal watercraft use, would not result in impairment of park resources and values for which the Glen Canyon National Recreation Area was established. Thus, by ensuring resources are protected for future generations, the National Park Service is representing the interests of the general public.

Public Comment:	*Commenter:*	*Affiliation:*
1248C	National Park Conservation Association	Organization

B *Comment*: Glen Canyon National Recreation Area's 1979 General Management Plan does state that the recreation's primary management objective is to "[provide] maximal recreational enjoyment to the American public and their guests." NPS laws and policies - and substantial case law - however, make clear that managers must not permit any recreational activities that derogate the values embodied in, and the purpose defined by, the Organic Act. If the Park Service is to succeed in its mission to preserve parks 'unimpaired for future generations," it must be vigilant - more vigilant than it has been in the past - about preventing inappropriate recreation to gain a foothold in park units. The Park Service's own Management Policies tell managers that they "must always seek ways to avoid, or to minimize to the greatest degree practicable, adverse impacts on park resources and values (NPS *Management Policies* at 1.4.3)." Through its original system-wide personal watercraft rulemaking, the National Park Service acknowledged that personal watercraft cause resource degradation and disturb other visitors.

Response: The impact of the elimination of personal watercraft was considered under alternative C. Elimination of personal watercraft is not being included under the modified preferred alternative (alternative B) because it was determined in the analysis of the modified preferred alternative (alternative B) in the *Draft Environmental Impact Statement* that personal watercraft use would not result in impairment to park resources and is consistent with Glen Canyon National Recreation Area's purpose and management objectives defined by the enabling legislation for recreation area. What constitutes impairment is defined by resource in the "Methodology" section of the "Environmental Consequences" chapter.

Public Comment:	*Commenter:*	*Affiliation:*
1174E	Living Rivers	Organization
1248D	National Parks Conservation Association	Organization

C Comment: Since personal watercraft were not part of the recreational mix at the time of the enabling legislation it does not follow that personal watercraft are consistent with the enabling legislation. It is not clear that restricting or eliminating personal watercraft is inconsistent with the enabling legislation.

Response: The settlement agreement did not supercede or overturn Glen Canyon National Recreation Area's enabling legislation. Both the personal watercraft settlement agreement (described in "Personal Watercraft Use Regulatory Background" in the "Purpose of and Need for Action" chapter) and the authorizing legislation for Glen Canyon were considered when developing alternatives for the environmental impact statement.

The "Introduction" section in the "Purpose of and Need for Action" chapter states that the overall objective for the plan is to evaluate a range of alternatives and strategies for personal watercraft use to ensure protection of the recreation and resource values provided at Glen Canyon National Recreation Area. This objective was derived from the enabling legislation for Glen Canyon National Recreation Area. As further stated in this section, an analysis on the management of personal watercraft is provided under each alternative to meet the terms of the settlement agreement between the Bluewater Network and the National Park Service. As a result, the alternatives presented in the *Draft* and *Final Environmental Impact Statements* protect resources and values while providing recreational opportunities at Glen Canyon National Recreation Area. As required by the settlement agreement and NPS *Management Policies*, the impacts associated with personal watercraft and other recreational uses are evaluated under each alternative (refer to the "Environmental Consequences" chapter) to determine the potential for impairment to park resources. The National Park Service finds that implementation of the modified preferred alternative (alternative B), including the provision for personal watercraft use, would not result in impairment of park resources and values for which the Glen Canyon National Recreation Area was established. Thus, by ensuring resources are protected for future generations, the National Park Service is representing the interests of the general public.

Public Comment:	*Commenter:*	*Affiliation:*
1245D	Sierra Club, Utah Chapter	Organization

D Comment: It is quite clear that the entire Lake Powell experience has been designed to further the interests of those who manufacture internal combustion engines and those who sell petroleum products. There is no evidence that anyone has considered the interests of those such as myself who wish to hike and kayak the areas around Powell Reservoir in combustion-free peace. This appears to be in gross violation of the mandate given to the National Park Service. The promotion of recreation over other concerns—such as habitat and water quality—is obscene. The obscenity is further compounded when those forms of recreation which are the least damaging to habitat health and human enjoyment—i.e., non-polluting activities such as hiking and kayaking—are consistently ignored in favor of more development to support motorized access.

Response: The *Draft* and *Final Environmental Impact Statements* were not written to be vehicles to lobby for more petroleum-based recreation, or as an effort to undermine the enabling legislation. The objectives for the plan were derived from the enabling legislation for Glen Canyon National Recreation Area, which provides for management of the recreation area for public outdoor recreation and enjoyment of Lake Powell and adjacent lands and for the preservation of the scenic, historic, scientific, and other important features of the area.

Glen Canyon National Recreation Area is a unit of the national park system and is managed under the same laws and policies as all units in the system. The NPS *Organic Act of 1916* directs the National Park Service to manage units "to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such a manner as will leave them unimpaired for the enjoyment of future generations." Congress reiterated this mandate in *the Redwood National Park Expansion Act of 1978*, by stating that the National Park Service must conduct its actions in a manner that will ensure no "derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress." While the enabling legislation of Glen Canyon National Recreation Area does provide for the management of public recreation, it also provides for the preservation of the scenic, historic, scientific, and other important features of the area as discussed in the "Background" section of the "Purpose of and Need for Action" chapter.

Public Comment:	*Commenter:*	*Affiliation:*
139B		Individual

Issue 4: *Potential Conflicts with General Management Plan*

A Comment: "The *Draft Environmental Impact Statement* failed to identify potential conflicts between personal watercraft management alternatives and Glen Canyon National Recreation Area's General Management Plan objectives relating to the Natural Zone. Clearly, alternative C goes the farthest in achieving these objectives.

It is apparent from the text on page 26 that Glen Canyon National Recreation Area has failed to act in accordance with its General Management Plan regarding motorized personal watercraft impacts on the Natural Zone. Noise from motorized personal watercraft can be heard distinctly from various points up to 2 miles (p. 102) from the nearest lake surface. Obviously, personal watercraft management alternatives do affect the lands in question, and the Glen Canyon National Recreation Area's own general management plan, with its directive to manage the Natural Zone as wilderness, should have been identified as having potential conflicts with personal watercraft management alternatives.

Since roughly half of the Lake Powell shoreline is within the Natural Zone, common sense would dictate that one or more *Draft Environmental Impact Statements,* Alternatives should have examined eliminating motorized personal watercraft use in some or all of those canyons adjoining the Natural Zone shoreline areas while still allowing personal watercraft in the large areas of Lake Powell with shorelines not adjacent to the Natural Zone. These alternatives would have met the objectives of the Glen Canyon National Recreation Area general management plan and would have also provided a middle ground between the status quo A and B alternatives and the total ban of alternative C.

Response: There is a potential conflict in the management objectives between the Recreation and Resource Utilization Zone and the Natural Zone that is extremely difficult to avoid because the zones are adjacent to each other. However, the percentage of the Natural Zone that may be adversely affected by personal watercraft noise is small. The noise generated by watercraft, including personal watercraft, is consistent with Glen Canyon National Recreation Area's enabling legislation "to provide for public outdoor recreation use and enjoyment of Lake Powell and the lands adjacent thereto." The preparation of a lake management plan, which is included as an element of all alternatives in the *Final Environmental Impact Statement*, will provide an opportunity for the National Park Service to further evaluate impacts from all lake uses to recreation area resources, including soundscape.

Public Comment:	*Commenter:*	*Affiliation:*
1180D	Sierra Club, Utah Chapter	Individual

Scope of the Analysis

Issue 1: *Rainbow Bridge National Monument Should be Included in the Analysis*

A Comment: The *Draft Environmental Impact Statement* does not include any provision for the long-term management of the Rainbow Bridge National Monument, which should be included in the Glen Canyon lake management plan.

Response: Rainbow Bridge National Monument is a separate unit of the National Park Service. The scope of the *Draft* and *Final Environmental Impact Statements* is on management of personal watercraft within Glen Canyon National Recreation Area. Personal watercraft use at Rainbow Bridge National Monument is currently prohibited as a result of the National Park Service amended regulation that was implemented in March 2000 (36 CFR 3.24 (a), 2000).

Public Comment:	*Commenter:*	*Affiliation:*
1175B	American Watercraft Association	Organization

Issue 2: *Why Is the Focus on Personal Watercraft?*

A Comment: Many commenters questioned why the focus of the analysis was on personal watercraft alone when other motorized watercraft have similar or greater impacts on park resources.

Response: Although the personal watercraft industry has claimed personal watercraft cannot be regulated differently than other motorboats, the National Park Service determined that personal watercraft are different from conventional motorboats and finalized personal watercraft-specific regulations in March 2000. The NPS definition of personal watercraft is as follows: "Personal watercraft refers to a vessel, usually less than 16 feet in length, which uses an inboard, internal combustion engine powering a water jet pump as its primary source of propulsion. The vessel is intended to be operated by a person or persons sitting, standing, or kneeling on the vessel, rather than within the confines of the hull" (see "Personal Watercraft Use Regulatory Background" in the "Background" section of the "Purpose of and Need for Action" chapter).

As discussed in the "Alternatives" chapter, the National Park Service evaluated and chose the best regulatory approach in the modified preferred alternative (alternative B) in the *Draft Environmental Impact Statement* and the modified preferred alternative (alternative B) in the *Final Environmental Impact Statement*) in order to maintain the opportunities for various types of recreation while protecting the resources of Glen Canyon National Recreation Area.

Public Comment:	*Commenter:*	*Affiliation:*
1393E	Environmental Protection Agency	Public Agency
7A, 827C, 608B		Individual

Issue 3: *Personal Watercraft Should Not Be Singled Out for Regulation*

A Comment: Commenters, including the Personal Watercraft Industry Association and the National Marine Manufacturers Association, advocate that any regulation or restriction on personal watercraft by the National Park Service should be uniformly applied to all motorized recreational vessel. By allowing other motorized vessels to operate in some of the proposed restricted areas would undermine the purported goals of reducing user conflicts and allowing for solitude and quiet. Closing these river areas to personal watercraft, and not other motorized vessels, would be discriminatory.

Response: The plan was not designed to determine if personal watercraft caused more environmental damage to park resources than other boats, but rather, to determine if personal watercraft use was consistent with Glen Canyon National Recreation Area's enabling legislation and management goals and objectives. The overall objective is to meet the terms of the settlement agreement with Bluewater Network (see "Introduction" in the "Purpose of and Need for Action" chapter). An analysis was done on the management of personal watercraft in order to meet the terms of the settlement agreement between Bluewater Network and the National Park Service. With completion of this *Final Environmental Impact Statement*, the National Park Service may either take action to adopt special regulations to manage personal watercraft use at Glen Canyon, or may choose to discontinue personal watercraft use. The alternatives listed were based upon the best information available. As noted by the commenter, the management actions under the modified preferred alternative (alternative B) for the San Juan, Escalante, Colorado, and Dirty Devil Rivers would be implemented to reduce visitor conflicts with river rafters, fishermen, and backcountry hikers; promote opportunities for quiet and solitude; and ensure visitor safety. Following completion of this *Final Environmental Impact Statement*, it remains within NPS authority to prescribe similar use restrictions on all watercraft through the Superintendent's Compendium.

As required by the settlement agreement and NPS *Management Policies*, the impacts associated with personal watercraft and other recreational uses are evaluated under each alternative (refer to the "Environmental Consequences" chapter) to determine the potential for impairment to park resources. The National Park Service finds that the modified preferred alternative (alternative B), which allows for personal watercraft use, would not result in impairment of park resources and values for which the Glen Canyon National Recreation Area was established.

Public Comment:	*Commenter:*	*Affiliation:*
1344U, 1344D, 1344N	Personal Watercraft Industry Association	Organization
1176B	National Marine Manufacturers Association	Organization

B Comment: A number of commenters, including the Personal Watercraft Industry Association and the National Marine Manufacturers Association, proposed that the flat-wake zone should apply to all motorized vessels. Restricting only personal watercraft to flat-wake speeds presents a safety hazard if other vessels are permitted to operate at significantly faster speeds.

Response: The plan was not designed to determine if personal watercraft caused more environmental damage to park resources than other boats, but rather, to determine if personal watercraft use was consistent with Glen Canyon National Recreation Area's enabling legislation and management goals and objectives. The overall objective is to meet the terms of the settlement agreement with Bluewater Network (see "Introduction" in the "Purpose of and Need for Action" chapter). An analysis was done on the management of personal watercraft in order to meet the terms of the settlement agreement between Bluewater Network and the National Park Service. With completion of this *Final Environmental Impact Statement*, the National Park Service may either take action to adopt special regulations to manage personal watercraft use at Glen Canyon, or may choose to discontinue personal watercraft use.

The alternatives listed were based upon the best information available. The management actions under alternative B (modified preferred alternative) for the San Juan, Escalante, Colorado, and Dirty Devil Rivers would be implemented to reduce visitor conflicts with river rafters, fishermen, and backcountry hikers; promote opportunities for quiet and solitude; and ensure visitor safety.

Under Utah State law, all boaters must operate at flat-wake speeds or idle speed within 150 feet of another boat, a person in or floating on the water, a waterskier (except those being towed), a shore fisherman, a launching ramp, a dock, or a designated swimming area. Arizona State law requires all boaters to operate at flat-wake speeds within 60 feet of another vessel. The modified preferred alternative (alternative B) addresses signing, buoys, and boater education that will enhance other watercraft operators observance of safe boating practices.

Public Comment:	*Commenter:*	*Affiliation:*
1344T, 1344D	Personal Watercraft Industry Association	Organization
1176C	National Marine Manufacturers Association	Organization

Issue 4: *Personal Watercraft Can Be Singled Out for Regulation*

A Comment: The personal watercraft industry has claimed that personal watercraft are recognized by the US Coast Guard (USCG) as "class A" vessels and therefore cannot be regulated differently than other motorboats. However, the USCG states that the term "class-A vessel" has no meaning insofar as Coast Guard regulations are concerned (see enclosed USCG letter). To date, the USCG has refrained from defining personal watercraft. Rather, the Coast Guard encourages other government agencies to define the craft. The National Park Service determined that personal watercraft are different from conventional motorboats and finalized personal watercraft-specific regulations in March of 2000.

Response: The NPS definition of personal watercraft is as follows: "Personal watercraft refers to a vessel, usually less than 16 feet in length, which uses an inboard, internal combustion engine powering a water jet pump as its primary source of propulsion. The vessel is intended to be operated by a person or persons sitting, standing, or kneeling on the vessel, rather than within the confines of the hull" (see "Personal Watercraft Use Regulatory Background" in the "Background" section of the "Purpose of and Need for Action" chapter).

Public Comment:	*Commenter:*	*Affiliation:*
1002C	Bluewater Network	Organization

B Comment: The personal watercraft industry has long maintained that personal watercraft riders have a "right" to use any boating infrastructure built using funds appropriated under the Federal Aid in Sport Fish Restoration Act (FASFRA). However, a 1999 Florida lawsuit negates this claim. In Kissimmee River Valley Sportsman's Association v. The City of Lakeland (60 F. Supp. 2d 1289), the United States District Court in Florida ruled that FASFRA does not create a federal right to equal access for boats of common horsepower ratings at boat launch facilities constructed or maintained under the Act. This case suggests that government agencies may prohibit personal watercraft regardless of whether they have used FASFRA funds to construct boat launches and facilities.

Response: All launch facilities are constructed with federal or federal/state funding. Funds provided through the NPS Fee Demo program and concessioner fees have been used for the construction of new launch ramps, courtesy docks, floating boat-pump-out stations, first-aid stations, and parking areas. *Federal Aid in Sport Fish Restoration Act* (FASFRA) funding has not been used at Glen Canyon National Recreation Area to build launches or facilities.

Public Comment:	*Commenter:*	*Affiliation:*
1002D	Bluewater Network	Organization

RECREATION AREA OPERATIONS

Enforcement

Issue 1: ***Enforce the Existing Sound Standard***

A Comment: The sound standard at the Glen Canyon National Recreation Area is 82 decibels at 82 feet at full acceleration, a standard that is met by every unmodified personal watercraft. If particular modified personal watercraft exceed this limit, then they should be cited and/or removed from the waters of Lake Powell. This standard can, and should be met under alternative A.

Response: Regulations regarding noise are enforced by state and federal visitor protection staff at Glen Canyon National Recreation Area. Appropriate enforcement action is taken against any vessel exceeding the noise standards.

Public Comment:	*Commenter:*	*Affiliation:*
1239F	Utah Shared Access Alliance	Organization

Issue 2: ***Park Service Should Enforce Regulations such as Speed Limits on the Lake***

A Comment: Although the accident rate this year has been better than the past years, I still see this issue as very important. Sufficient laws are in place to protect visitors however there needs to be more enforcement of these laws.

Response: An element of alternative B (the modified preferred alternative) is to seek increased funding to provide additional law enforcement at Glen Canyon National Recreation Area to enforce the existing regulations. An increased number of law enforcement officers on the lake would have the added advantage of increasing the number of visitor contacts on the lake to prevent unsafe behavior. In addition, an active information and education program, also an element of the modified preferred alternative (alternative B), would help to reduce the need for enforcement actions.

Public Comment:	*Commenter:*	*Affiliation:*
156B, 156E		Individual

Issue 3: ***Cooperation with Other Agencies***

A Comment: The Park Service should work with multi-jurisdictional law enforcement in order to enforce existing sound standards.

Response: Regulations regarding boating noise exist at the state and federal levels. Sound standards are enforced at the recreation area by both state and federal visitor protection staff. See the "Soundscape" section of the "Affected Environment" chapter and appendix B for the specific laws. As stated in the *Final Environmental Impact Statement*, NPS rangers and personnel from the U.S. Coast Guard enforce both state and federal boating laws. Patrol officers from Utah State Parks and Recreation and Arizona Game and Fish Department enforce state boating laws.

Public Comment:	*Commenter:*	*Affiliation:*
1239H	Utah Shared Access Alliance	Organization

Impacts of Personal Watercraft Use

Issue 1: *Additional Restrictions will Dilute Law Enforcement Effectiveness*

A Comment: Additional rulemaking and restrictions on personal watercraft use will only serve to further dilute the presence of law enforcement in the recreation area.

Response: The analyses in the *Final Environmental Impact Statement* acknowledge that new personal watercraft restrictions associated with alternatives B or C would have a short-term minor adverse effect on visitor protection staff. However, the adverse effects would decrease over time as visitors become familiar with the restrictions and as newly closed areas and flat-wake zones become self-regulating after signs and markers are installed.

Public Comment:	*Commenter:*	*Affiliation:*
1178F	ARAMARK	Business

B Comment: National Park Service efforts to seek additional funding for increased law enforcement activities are independent of any management alternative. Simply put, existing laws already govern the actions of all boaters. Additional law enforcement presence would benefit all boaters whether or not a personal watercraft management plan is implemented.

Response: We agree with the commenter that increased law enforcement would benefit all boaters at the recreation area. Glen Canyon National Recreation Area is indeed seeking additional funding for law enforcement in order to increase visitor safety independently of this environmental impact analysis process for personal watercraft rulemaking at the recreation area.

Public Comment:	*Commenter:*	*Affiliation:*
1178F	ARAMARK	Business

Issue 2: Increase Monitoring of the Type of Watercraft Entering the Recreation Area

A Comment: The explosion of personal watercraft on the lake has made the existing laws unenforceable. The size and shape of Lake Powell demands that stringent monitoring of what goes into the lake occurs before the watercraft launch, not afterwards.

Response: The modified preferred alternative (alternative B) in the *Final Environmental Impact Statement* would require that personal watercraft meet the EPA 2006 emission standards by the end of 2012. Personal watercraft not meeting the standards would no longer be allowed to operate in Glen Canyon National Recreation Area beginning in 2013.

The National Park Service expects that by 2012, most personal watercraft owners would already be in compliance with the EPA 2006 marine engine standards. The impact on recreation area operations resulting from the 2012 ban on carbureted two-stroke personal watercraft use is expected to be small. Personal watercraft manufacturers currently offer models that are compliant with the EPA 2006 standards, and new personal watercraft purchased later than 2006 would already be compliant. The average operating life of a personal watercraft is 5 to 10 years, depending upon the source (see the "General Methodology" section in the "Environmental consequences" chapter). As a result, it is expected that the majority of noncompliant personal watercraft would no longer be in operation when the engine restrictions proposed under the modified preferred alternative (alternative B) take effect in 2012.

Public Comment:	*Commenter:*	*Affiliation:*
164C		Individual

Issue 3: *Visitation Effects on Recreation Area Operations*

A Comment: Alternative C in the *Draft Environmental Impact Statement* states, "In the long term, visitors returning with other craft would have a direct, negligible to minor, adverse effect." This statement is very troubling because it classifies visitors to Lake Powell as an "adverse effect."

Response: Visitation to the recreation area does have an impact on the recreation area's resources and visitor protection staff. For example, increased visitor use to the recreation area, with no change in the number of visitor protection staff, would be a strain on park management resources and could result in an adverse effect. Likewise, a reduction in the number of visitors using personal watercraft at the recreation area could reduce the amount of time visitor protection staff spend responding to incidents or accidents involving personal watercraft, which is considered to be beneficial. The text in the *Draft Environmental Impact Statement* was meant to indicate that the adverse effect on park staff was a result of the visitor activity.

Public Comment:	*Commenter:*	*Affiliation:*
1239L	Utah Shared Access Alliance	Organization

B Comment: What is the benefit of eliminating 26% of Lake Powell users in order to realize a 15% reduction in law enforcement cases?

Response: The decision to manage personal watercraft was not based on a need to reduce law enforcement cases. The "Introduction" section in the "Purpose of and Need for Action" chapter states that the overall objective for the plan is to evaluate a range of alternatives and strategies to manage personal watercraft with the goal of ensuring protection of recreational and resource values. This objective was derived from the enabling legislation for Glen Canyon National Recreation Area. As further stated in this section, a special analysis on the management of personal watercraft was also provided under each alternative to meet the terms of the settlement agreement between the Bluewater Network and the National Park Service.

Public Comment:	*Commenter:*	*Affiliation:*
1239L	Utah Shared Access Alliance	Organization

SHORELINE/SUBMERGED AQUATIC VEGETATION

Affected Environment

Issue 1: ***General Impacts of Personal Watercraft on Shoreline and Submerged Aquatic Vegetation***

A *Comment*: The *Draft Environmental Impact Statement* identified the issue of potential concern that the beaching and landing of personal watercraft could result in the trampling of shoreline vegetation. The comment refers to several other phrases in the text that discuss the affected environment and the indistinguishable cumulative effects of personal watercraft use and other watercraft on shoreline or submerged aquatic vegetation.

Response: The National Park Service agrees that appropriate use and operation of personal watercraft in accordance with the manufacturer's recommended use in shallow water would not affect submerged aquatic vegetation. However, this does not prevent damage to vegetative life by trampling, particularly on beaches where there is other concentrated recreational use. As described in the "Environmental Consequences" chapter, due to the nature of the reservoir and the shoreline environment, personal watercraft and other watercraft users, and other visitor-induced activities, all have access to the same shoreline areas of Lake Powell. The majority of visitor use is concentrated along the shoreline, which is below the maximum pool elevation. The amount of high-quality habitat in these areas is low compared to the amount above the high-water line. Much of the shoreline is composed of nonnative tamarisk / bare ground, and the lake does not have sensitive grasses or submerged aquatic vegetation, except in the sensitive inflow areas.

The National Park Service must manage Glen Canyon National Recreation Area to protect the recreational opportunities available at the site, as well as the natural resources found in the lake and surrounding lands. To accomplish this, the development of a future lake management plan, which is a component of all alternatives, would provide the tools necessary to analyze activities that take place on the lake and would help determine if unacceptable impacts are occurring. Even though the rationale and need exist to support consideration of personal watercraft management under a separate decision-making framework, there remains the need to examine all uses of the lake collectively. As identified in the cumulative effects analysis in the "Environmental Consequences" chapter, there are many management issues involving the mix of lake uses that require additional planning.

Public Comment:	*Commenter:*	*Affiliation:*
1344P	Personal Watercraft Industry Association	Organization

Impacts of Personal Watercraft Use

Issue 1: *Impacts on Shoreline Vegetation from Waves Generated by Personal Watercraft*

A Comment: Personal watercraft damage shoreline vegetation and their wakes produce erosive effects.

Response: According to NPS *Management Policies* 2001 (NPS 2000d), natural shoreline processes such as erosion, deposition, dune formation, overwash, inlet formation, and shoreline migration should continue without interference within a park unit. The *Draft* and *Final Environmental Impact Statements* recognize that the near-shore lake environment, with its desert climate, is affected by wave erosion, highly variable water levels, poor soils, and generally steep shorelines. These conditions restrict vegetative cover to sparse stands of fast-growing vegetation species that are occasionally interspersed with small, dense stands of salt cedar. As described for alternative A under "Cumulative Effects," shoreline vegetation has historically been subjected to many sources of disturbance since the time the recreation area was created. The most influential disturbance has been repeated inundation and drying as the reservoir level rises and falls. Compared to the substantial influences that current reservoir fluctuations and shoreline conditions exert on shoreline vegetation conditions, it is very unlikely that personal watercraft and other watercraft users would have a noticeable cumulative impact on shoreline vegetation (including submerged aquatic, riparian, and wetland vegetation).

The National Park Service must manage Glen Canyon National Recreation Area to protect the recreation opportunities available at the site, as well as the natural resources found in the lake and surrounding lands. To accomplish this, the development of a lake management plan, which is a component of all alternatives, would provide the tools necessary to analyze activities that take place on the lake and would help determine if unacceptable impacts are occurring. Even though the rationale and need exist to support consideration of personal watercraft management under a separate decision-making framework, there remains the need to examine all uses of the lake collectively. As identified in the cumulative effects analysis under the "Environmental Consequences" chapter, there are many management issues involving the mix of lake uses that require additional planning. The modified preferred alternative (alternative B) provides for a three-year pilot study to further evaluate personal watercraft use areas. Potential restrictions of personal watercraft use in other locations of the recreation area would be evaluated during the pilot study. The purpose of the pilot study and a description of how it would be implemented are provided in appendix C.

Public Comment:	*Commenter:*	*Affiliation:*
689B		Individual

Issue 2: *Inadequacy of Data to Support Statements that Personal Watercraft Use Impacts Submerged Aquatic Vegetation*

A Comment: No evidence is disclosed that would indicate personal watercraft use harms shoreline vegetation. The *Draft Environmental Impact Statement* speculates that personal watercraft "may crush or uproot grasses or other submerged aquatic vegetation that occurs in shallow water" (pg ix). This speculation is totally specious and misleading given the lack of data.

Response: A summary of the NPS rulemaking and associated personal watercraft litigation is contained under "Personal Watercraft Regulatory Framework" in the "Purpose of and Need for Action" chapter. The overall objective is to meet the terms of the settlement agreement between Bluewater Network and the National Park Service (see "Introduction" in the "Purpose of and Need for Action" chapter). An analysis of shoreline vegetation was done in order to meet the terms of the settlement agreement. National research indicates that personal watercraft accessing shallow areas may uproot or crush shoreline vegetation. At Glen Canyon National Recreation Area, the adverse effects of personal watercraft on shoreline vegetation were considered to be negligible. Under the modified preferred alternative (alternative B), mitigation measures would be implemented to reduce the amount of petroleum-related pollution entering the water, which would indirectly benefit shoreline vegetation. In addition, the modified preferred alternative

(alternative B) provides for a three-year pilot study to further evaluate personal watercraft-use areas. Potential restrictions of personal watercraft use in other locations of the recreation area would be evaluated during the pilot study. The purpose of the pilot study and a description of how it would be implemented are provided in appendix C.

Public Comment:	*Commenter:*	*Affiliation:*
1239J	Utah Shared Access Alliance	Organization

SOCIOECONOMICS

Affected Environment

Issue 1: ***Economic Analysis Does Not Take into Account the Economic Cost of Noise***

A Comment: On page 274 of the *Draft Environmental Impact Statement*, the National Park Service states that alternative C, a personal watercraft ban, would result in a loss of $25 to $42 million to the local economy. The National Park Service states this is due in part to the fact that hundreds of thousands of visitors will not return to Glen Canyon National Recreation Area. We believe the NPS' figure grossly inflates the economic impact of a personal watercraft ban for it does not include several economic benefits that will result from the prohibition and assumes that park visitation will drop.

First, researchers have estimated that an individual personal watercraft inflicts roughly $50 dollars worth of noise cost each day of operation. The National Park Service estimates that personal watercraft at Lake Powell are in operation approximately 220,000 boat days per season. Multiplying the noise costs by the days of operation produces $11 million in noise costs at Lake Powell per year. Dividing this number in half to take into account the greater tolerance of boaters to boat noise results in $5.5 million in noise costs. If one adds personal watercraft pollution costs (which have been estimated at $12 per day of operation), the overall cost of personal watercraft operation upon natural soundscapes and air/water quality rises to more than $8 million. Besides overlooking the noise and pollution costs of personal watercraft operation, there is also no discussion of the economic costs of continued personal watercraft operation upon national recreation area's wildlife, public safety, and visitor use. Obviously, banning personal watercraft eliminates these costs and result in significant economic benefits to the public. Moreover, elimination of these costs from alternative C would substantially reduce the economic impact of a personal watercraft ban. Unfortunately, the National Park Service neglected to include the economic benefits of a personal watercraft ban, as well as the fact that visitation may actually increase at the national recreation area in its analysis of alternative C. These oversights call into question the accuracy and thoroughness of the Park Service's economic analysis.

Response: Law Engineering and Environmental Services (LEES 2002) conducted a benefit-cost analysis of personal watercraft regulatory alternatives to evaluate the social welfare implications. The study examined whether the reallocation of society's resources (such as those referenced by the commenter) promoted efficiency. That is, the analysis assessed whether the actions would result in benefits (gains in social welfare) greater than the associated costs to society (losses in social welfare).

The study also showed that the number of non-personal watercraft users visiting the community of Page, AZ, could increase due to less noise and pollution and that this could contribute to increased enjoyment of the area. However, because of uncertainties in quantifying changes in visitation for this group of people, increases in expenditures associated with this potential change in visitation patterns were not included in the analysis. These changes were evaluated qualitatively based on best available data and professional judgment.

The *Final Environmental Impact Statement* has incorporated the research noted by the commenter into the list of references. Text has been added to the *Final Environmental Impact Statement* to provide additional qualitative analysis of the economic costs of personal watercraft use.

Public Comment:	*Commenter:*	*Affiliation:*
1002AE	Bluewater Network	Organization

Economic Impact Analysis

Issue 1: *Long-Term Economic Consequences of a Personal Watercraft Ban Are Inaccurate*

A Comment: On page 67 in table 3 of the *Draft Environmental Impact Statement*, "In the short term and long term, cumulative effects would be adverse and moderate." This describes the socioeconomic impact of alternative C. If this is true then why would the National Park Service assume that motorized users would soon return to the same level, that a reduction or elimination of personal watercraft would have only a temporary change in the level of motor boat use? There is an error in logic here. At one place the National Park Service suggests that the drop in motorized watercraft use would be transient. But here the National Park Service suggests the impacts on the socioeconomics of the area would be "adverse and moderate" in the short term and the long term. If recreational users return to a pre-ban level in a short time, then why would adverse, moderate effects persist into the long term?

Response: Decisions regarding personal watercraft use can affect specific sectors of the local economy. If personal watercraft are permanently banned, those businesses or parts of businesses that serve personal watercraft users, such as personal watercraft rentals, sales, and repairs, could be eliminated from the economy in the long term. Review of literature and professional judgment suggests that there are segments of the public that would choose to visit the recreation area if personal watercraft use were eliminated. A long-term trend of increased nonmotorized use, or the use of other types of watercraft in the future to replace some of the functions of personal watercraft (e.g., remote canyon exploration), would offset some of the adverse economic effects of a ban on personal watercraft. These combined direct and indirect effects would be moderate as defined in the "Methodology" section.

Public Comment:	*Commenter:*	*Affiliation:*
12451	Sierra Club, Utah Chapter	Organization

Impacts from Personal Watercraft Restriction

Issue 1: *The Long-term Economic Effects of a Personal Watercraft Ban Will Be Adverse*

A *Comment*: I disagree with your conclusions regarding alternative C that eventually everything will be all right socio-economically speaking. I believe there will be significant and lasting Short and Long Term effects if personal watercraft are banned at Lake Powell.

Response: The report prepared by Law Engineering and Environmental Services (LEES 2002) and referenced in the *Draft* and *Final Environmental Impact Statements* fully evaluates the economic effects of alternative C. The study shows that the number of non-personal watercraft users visiting the community of Page, AZ, could increase due to less noise and pollution, and that this could contribute to increased enjoyment of the area. However, because of uncertainties in quantifying changes in visitation for this group of people, increases in expenditures associated with this potential change in visitation patterns were not included in the analysis. These changes were evaluated qualitatively. The study also reports that there are business activities that depend largely or solely on personal watercraft and that the adverse effects on these would be long term.

Public Comment:	*Commenter:*	*Affiliation:*
170C		Individual

Issue 2: *The Economic Effects of a Ban on Personal Watercraft Are Overstated*

A *Comment*: If motorized personal watercraft were eliminated from substantial areas of Lake Powell people who more highly value nonmotorized watercraft would recreate at the world-class Glen Canyon National Recreation Area in numbers that would easily offset any decline in visitation from the motorized personal watercraft ban. This fact also contradicts the *Draft Environmental Impact Statement*'s concluded adverse socio-economic impacts of alternative C on the economy of Page and surrounding communities. The *Draft Environmental Impact Statement* failed to identify visitor use patterns of alternative C by failing to account for potential users who avoid Glen Canyon National Recreation Area because of current policies. By ignoring the influx of visitors who would be drawn by the implementation of alternative C, the adverse socioeconomic impacts of alternative C are overstated.

Response: As the commenter notes, it is reasonable to assume that with the elimination of personal watercraft, some individuals who have chosen not to visit the recreation area in the past may choose to visit with personal watercraft absent. The result would be an economic effect that would offset, to some degree, the economic losses that would result from elimination of personal watercraft. The *Final Environmental Impact Statement* takes this into account, qualitatively, in the discussion of likely effects on the local and regional economy. There is no research or literature reference that would allow an estimate or quantification of the number of people who may choose to visit the recreation area without personal watercraft present.

Public Comment:	*Commenter:*	*Affiliation:*
1180E		Individual

Issue 3: *The Economic Effects of a Personal Watercraft Ban Will Go Beyond the Local Economy*

A *Comment*: In the socioeconomic impact section of the study the areas affected if personal watercraft were excluded from Lake Powell seem very narrow and limited. Personal watercraft sales and rental businesses in the Salt Lake area will be affected if personal watercraft are excluded from Lake Powell.

Response: The analysis of economic effect was focused on a limited area. Because it is anticipated that the economic impacts of the regulation would be concentrated in the community of Page, AZ, the analysis was performed for the zip code covering Page (zip code 86040). Because this is a relatively small analysis area, the economic impact analysis may not capture some secondary impacts on other towns in Coconino County or other regions. The reasoning is that it is less likely that individuals residing in Page, as well as visitors to Glen Canyon National Recreation Area, purchase goods and services from businesses outside of the town. The analysis was designed to focus on the groups most affected by the regulation. The impacts on other cities and towns compared to the size of their economies, are expected to be very small relative to the impact on Page, AZ. Interviews with Page-area businesses were conducted to determine the character of the local business community relative to personal watercraft use. During the interviews, it was identified that businesses in other cities such as Salt Lake City, UT, and Grand Junction, CO, are affected by personal watercraft use in Glen Canyon National Recreation Area. The economic effect on those businesses and local economies was evaluated qualitatively in the *Draft* and *Final Environmental Impact Statements*.

Public Comment:	*Commenter:*	*Affiliation:*
1170C	Utah Department of Natural Resources, Div. of Parks and Recreation	Public Agency

Issue 4: *The Full Economic Effect of a Ban on Personal Watercraft Is Not Presented*

A *Comment*: The full effect of alternative C has been calculated into revenues and losses. Losses would be greater than reported. Less business in Page would cause ripple effects to road maintenance, property values, water management monies, and the quality of schools.

Response: The analysis of economic effects described in the *Draft* and *Final Environmental Impact Statements* accounts for both primary and secondary impacts. The economic input-output model, IMPLAN, was used to calculate the economic impact associated with the elimination of personal watercraft. IMPLAN uses locally and regionally derived multipliers to estimate how money flowing through the economy is initially spent in any given sector. The total revenue losses reported under alternative C in the "Socioeconomic Environment" section of the "Environmental Consequences" chapter, show losses to all sectors, including real estate and local government. The economic impact analysis generally addressed the following basic questions concerning an activity of interest: (1) How much spending does this activity bring to the region? (2) What portion of sales by local businesses is due to this activity? (3) How much income does this activity generate for local households and businesses? (4) How many jobs does this activity support? (5) How much tax revenue is generated by this activity? The estimated impact is summarized within the *Draft* and *Final Environmental Impact Statements*, and the detailed results of the input-output analysis are reported in *Personal Watercraft Regulations in Glen Canyon National Recreation Area* (LEES 2002).

Public Comment:	*Commenter:*	*Affiliation:*
235B		Individual

SOUNDSCAPES

Affected Environment

Issue 1: ***Level Time History Graph Does Not Cite Distance***

A *Comment*: "The dBA level time history graph on page 105 does not indicate the average distance between the noise meter and the three riders." The commenter objects to using the decibel levels for interpretation of the noise being below the legal limit.

Response: The dBA (A-weighted decibel) level time history graph in the "Soundscapes" section of the "Affected Environment" chapter was presented to illustrate fluctuations in personal watercraft noise levels representative of typical use patterns. The meter at this site, # 3, was located amid the shoreline vegetation. The watercraft illustrated in this graph would have been circling the area at varying distances from the meter. The paragraph (entitled "Watercraft Pass-by Sound Levels Measured in Glen Canyon National Recreation Area in August 2001") in the *Final Environmental Impact Statement* describes the noise fluctuation but does not interpret the information on the graph relative to the legal noise limits, thus distance is not a relevant factor.

Public Comment:	*Commenter:*	*Affiliation:*
9051		Individual

Issue 2: ***Noise Data Indicates Violation of Utah Law***

A *Comment*: The table 12 on page 104 presents data which show that noise levels are potentially in violation of Utah law and that the National Park Service should recognize the sentiment behind the Utah law.

Response: Table 12 (in the *Draft Environmental Impact Statement*) (Table 14 in the *Final Environmental Impact Statement*) does not state that the noise levels were recorded on the shore nor does the accompanying text. Thus, no inference regarding the Utah boating and water-use activities noise regulation can be made. (The Utah noise regulation clearly states that the prohibition of 75 dBA noise is measured on shore.) The pass-by recordings were made using a microphone mounted above the front of an instrumented boat (HMMH 2002). The *Final Environmental Impact Statement* has been updated to include information regarding how pass-by recordings were made. Regarding the comment about intent and interpretation of Utah law, the National Park Service cannot determine or interpret the sentiment or intent of lawmakers.

Public Comment:	*Commenter:*	*Affiliation:*
1245L	Sierra Club, Utah Chapter	Organization

Issue 3: ***Natural Ambient Sound Level Not Adequate***

A *Comment*: The focus of returning natural quiet to a significant portion of the reservoir should be included in the analysis of alternatives. Specifically sound determinations and measurements used for a baseline should come from an area where personal watercraft are prohibited. The area should also be free from all motorized recreation and have no audible air traffic. The National Park Service should study the travel of noise through canyon systems including the distance noise may travel through confined canyons. The National Park Service should establish standards which tend to restore natural quiet and create zones where natural quiet predominates.

Response: *Director's Order 47* (NPS 2000b) specifies that the L90 sound level descriptor be used to establish the baseline or natural ambient sound level. The Harris Miller Miller & Hanson, Inc. study (HMMH 2002) used instrumentation in the canyon environment that allowed a determination of the

L90 value. Thus, noise levels were measured within the canyons and "confined" spaces of the Lake Powell environment.

The NPS noise standard is 82 dBA at 25 meters (82 feet). Motorized recreational activities on the lake that are in the Recreation and Resource Utilization Zone, are compatible with the recreation area's enabling legislation and the management goals for the Recreation and Resource Utilization Zone. The preparation of a lake management plan is now a component of each of the alternatives in the *Final Environmental Impact Statement*. Management actions to minimize impacts on the soundscape and all environmental impacts, including those of personal watercraft in relation to other users, will be evaluated during development of the lake management plan.

Public Comment:	*Commenter:*	*Affiliation:*
1245K	Sierra Club, Utah Chapter	Organization

Issue 4: Incorrect or Inadequate Analysis of Noise Impacts

A Comment: The difference between personal watercraft noise and noise generated by conventional motorized watercraft was not properly considered in the analysis of noise impacts. Personal watercraft noise is more annoying than the noise generated by conventional boats. The National Park Service believes that the "impacts of personal watercraft upon soundscapes and visitor experience will be minimal."

Response: The text has been changed for the *Final Environmental Impact Statement* to provide a better description and analysis of the unique sound signature of personal watercraft.

The analysis states that impacts on the natural soundscape would be "minor to moderate" as defined in the "Methodology" section in the "Environmental Consequences" chapter. The fluctuation of noise generated by personal watercraft is also discussed in the *Final Environmental Impact Statement*. This effect contributes to the "minor to moderate adverse" impact determination. The difference between noise generated by personal watercraft and motorboats is pointed out in the "Soundscapes" section of the "Environmental Consequences" chapter. The unique sound signature of personal watercraft noise is a contributing factor in the "minor to moderate" adverse impact determination.

In addition, alternative B (the modified preferred alternative) currently provides for a three-year pilot study to further evaluate personal watercraft use areas. Potential restrictions of personal watercraft use in other locations of the recreation area would be evaluated during the pilot study. The purpose of the pilot study and a description of how it would be implemented are provided in appendix C.

Regarding the characterization of sound associated with use of personal watercraft, the National Park Service conducted its own research, which is discussed in detail in the *Draft* and *Final Environmental Impact Statements*. This information is also supported by a technical report from the research consultant (HMMH 2002).

Public Comment:	*Commenter:*	*Affiliation:*
1002U	Bluewater Network	Organization

Issue 5: *The Effects on "Biophony" Were Not Considered in the Draft Environmental Impact Statement*

A Comment: There is a lack of park-specific information on personal watercraft impacts upon Glen Canyon's fish and wildlife. There is no discussion on personal watercraft noise and its impact upon entire biomes, specifically, the effect of noise on the biophony (defined by B. Krause in his book, Wild Soundscapes), or the unique manner in which creatures vocalize in a symbiotic relationship to one another.

Response: The effect of noise on "entire biomes" is not a quantifiable impact. Although Mr. Krause has developed plausible theories regarding the effects of noise on wildlife and the "biophony," peer-reviewed research would be required to establish parameters needed to quantify the effects of noise on this aspect of the environment. The adverse impacts of personal watercraft noise on wildlife are characterized as ranging from negligible to minor, and these impacts include potential effects to the "biophony," although these effects cannot be quantified or definitively defined. Additionally, factors, such as the natural variability of the environment and varying degrees of tolerance by individuals within species, can act as mitigation to offset or minimize adverse soundscape effects. Refer to the responses to comments in the "Wildlife" section (specifically, the response to comment 668 D) of this volume 2 for additional information regarding the effects of sound on wildlife.

A summary of the NPS rulemaking and associated personal watercraft litigation is contained under "Personal Watercraft Regulatory Framework" in the "Purpose of and Need for Action" chapter. The National Park Service believes it has complied with the court order and has assessed the impacts of personal watercraft on those resources specified by the judge, as well as other resources that could be affected. These analyses were done for every applicable impact topic with the best available data, as required by CEQ regulations (40 CFR 1502.22). Where data was lacking, best professional judgment prevailed using assumptions and extrapolations from scientific literature, other park units where personal watercraft are used, and personal observations of park staff.

Public Comment:	*Commenter:*	*Affiliation:*
1002W	Bluewater Network	Organization

Cumulative Effects

Issue 1: ***The Draft Environmental Impact Statement Does Not Adequately Analyze Cumulative Effects in the "Soundscapes" Section***

A *Comment*: The cumulative analysis of soundscape effects in the *Draft Environmental Impact Statement* is inadequate because it does not include or quantify the impacts associated with other actions, particularly aircraft noise.

Response: The noise measurements performed by Harris Miller Miller & Hanson (HMMH 2002) were made during the time periods when personal watercraft noise effects would most likely have the greatest impact on the natural soundscape. These measurements also included aircraft noise as part of the cumulative total noise level. The HMMH technical report, pages 27–30, describes the methods and results of a process called "source-identification logging" that was employed in the study. It indicates, by site, the percentage of time that all individual human-caused sound sources (types) were audible. Logging accounted for the audibility and duration of sound from different types of aircraft, watercraft, and other sources of human-caused sound. The information regarding individual source types was not presented in the *Draft* or *Final Environmental Impact Statements*, but it was included, and quantified, as an aggregate in the effects analysis in the "Environmental Consequences" chapter of both documents. The computed values of Leq, tables 45 and 46 are actually approximating the total ambient human-caused sound (as an average). This is because the measured and observed contribution of autos, aircraft, and other sources are minimal compared to watercraft.

The *Final Environmental Impact Statement* provides a revised analysis of impacts on the soundscape to reflect all the relevant information collected and to better understand the personal watercraft contribution to those impacts.

Public Comment:	*Commenter:*	*Affiliation:*
1391D, 1391M, 1391Q	Sierra Club	Organization

Impact from Other Vessels

Issue 1: *Concern That Personal Watercraft Were Singled Out for Restrictions*

A *Comment*: Several commenters noted that personal watercraft were being singled out for restrictions without regard to other sources of noise, including "muscle" boats, other motorboats, loud music, parties, and illegal fireworks.

Response: The plan was not designed to determine if personal watercraft caused more environmental damage to park resources than other boats, but rather, to determine if personal watercraft use was consistent with Glen Canyon National Recreation Area's enabling legislation and management goals and objectives. The overall objective is to meet the terms of the settlement agreement between Bluewater Network and the National Park Service (see "Introduction" in the "Purpose of and Need for Action" chapter). An analysis was done on the management of personal watercraft in order to meet the terms of the settlement agreement. With completion of this *Final Environmental Impact Statement*, the National Park Service may either take action to adopt special regulations to manage personal watercraft use at Glen Canyon, or may choose to discontinue personal watercraft use. The alternatives listed were based upon the best information available.

Public Comment:	*Commenter:*	*Affiliation:*
1344U	Personal Watercraft Industry Association	Organization
780C, 6A, 845B		Individuals

Impacts of Personal Watercraft Use

Issue 1: ***Suggest Implementing a Curfew on Personal Watercraft Use***

A Comment: I would recommend that if these personal watercraft are allowed, that they be under a curfew so that there are some times in the day when the lake is actually quiet and still.

Response: As noted in the *Draft* and *Final Environmental Impact Statements*, Utah law limits personal watercraft use to daytime hours, whereas Arizona law does not include such a restriction. Under the modified preferred alternative (alternative B), the National Park Service would work cooperatively with Utah and Arizona to develop unified laws for personal watercraft operations within the recreation area.

In addition, the modified preferred alternative (alternative B) provides for a three-year pilot study to further evaluate personal watercraft use areas. Potential restrictions of personal watercraft use in other locations of the recreation area would be evaluated during the pilot study. The purpose of the pilot study and a description of how it would be implemented are provided in appendix C.

The preparation of a lake management plan is a component of each of the alternatives in the *Final Environmental Impact Statement*. All noise sources and management actions to minimize environmental impacts and user conflicts, including those of personal watercraft in relation to other users, will be evaluated during development of the lake management plan.

Public Comment:	*Commenter:*	*Affiliation:*
909A		Individual

Issue 2: ***There Is Concern Over Comparison to Residential Noise Levels***

A Comment: Irrespective of the comparison with "suburbs at night" (page 204), a noise level averaging 30 dB at 0.6 miles may be excessively audible where the ambient is only 13 dB.

Response: The comparison to residential areas was presented only as a frame of reference so that the public could relate to what a particular dBA level represented. Noise levels of 30 dB are accounted for in the impact determinations.

Public Comment:	*Commenter:*	*Affiliation:*
1391P, 1391Q	Sierra Club	Organization

Issue 3: ***What Would be the Percent Time Audible for Personal Watercraft Under Each Alternative?***

A Comment: Regarding the last two sentences on page 208 of the *Draft Environmental Impact Statement* ("alternative A" vs. "alternative C" comparison): What would be the percent time audible for personal watercraft under "alternative A", and, correspondingly, what would be that time specifically for "alternative C"?

Response: The *Final Environmental Impact Statement* provides a modified noise analysis that better addresses the effects attributable to personal watercraft under alternative A. The percentage of time that personal watercraft would be audible is directly related to the proportion of personal watercraft operating at any given time. Information regarding the proportion of personal watercraft use is presented in tables 18 and 19. The percentage of time that personal watercraft would be audible under alternative C would be zero because personal watercraft would not be permitted to operate on Lake Powell under that alternative. The *Final Environmental Impact Statement* provides a modified noise analysis that examines audibility.

Public Comment:	*Commenter:*	*Affiliation:*
1391R	Sierra Club	Organization

Issue 4: *Fluctuations in Personal Watercraft Noise Is Not Analyzed Adequately*

A Comment: Several comments expressed a concern that the *Draft Environmental Impact Statement* did not address the fluctuations of sound that personal watercraft make compared to other motorized watercraft. Specifically, the distinctive pitch variation may have different effects on humans and other species and is more annoying or irritating than the more constant sounds associated with other boats.

Response: The pitch variations associated with personal watercraft and the noise differences between personal watercraft and motorboats are acknowledged under the "Soundscapes" section in the "Affected Environment" chapter. Personal watercraft noise does fluctuate as a result of typical operation, but the noise intensity levels are not typically in violation of the NPS noise standard. The suggestion that pitch variations may have different effects on humans and other species, and that the variation is more annoying or irritating, was incorporated in the analysis and contributes to the "minor to moderate" adverse impact determination.

Public Comment:	*Commenter:*	*Affiliation:*
1393X	Environmental Protection Agency	Public Agency
1136C, 3C		Individuals

Regulations, Methodologies and Assumptions

Issue 1: *Personal Watercraft Exceed Noise Standards*

A *Comment*: The text on page 104 and graph on page 105 show that "sharp turns and jumps increase the noise by 10 dBA bringing the noise level up to 86 dBA, 4 dBA above the legal limit of 82 dBA at 25 meters." The typical riding style of personal watercraft produces sound beyond the legal limit.

Response: The text states that the typical style of personal watercraft operation results in fluctuations of about 5 dBA, and a 180-degree turn produced about a 10 dBA fluctuation. Fluctuations are changes, including both increases and decreases, and do not represent only an increase as stated in the comment. Thus, a 10 dBA fluctuation could be represented as +/- 5 dBA. The data presented in table 14 indicates that adding 5 dBA to the highest personal watercraft sound measurement at 25 meters (82 feet) would be 81.4 dBA, which is under the NPS standard of 82 dBA at 25 meters (82 feet).

Public Comment:	*Commenter:*	*Affiliation:*
905H		Individual

Issue 2: *The Area Where the Noise Regulations Will Be Enforced Is Presumably Far Less Than the Area Where the Noise Pollution Will Make the Most Significant Impact*

A *Comment*: Alternative B states that enforcement of regulations to prevent this style of riding will be difficult beyond close proximity of ranger stations. Reduction of noise from regulation of aggressive riding style near the ranger station will be negligible due to the high volume of traffic near ranger stations, but what about the areas where enforcement by the National Park Service will not be feasible. The area where the noise regulations will be enforced is presumably far less than the area where the noise pollution will make the most significant impact.

Response: The commenter is correct in stating that National Park Service (or the state enforcement agencies) enforcement is more difficult beyond proximity to ranger stations. The National Park Service does not believe that there are areas where enforcement is not feasible (as stated in the comment); rather, enforcement in remote locations cannot be as regular as in areas near ranger stations. However, the National Park Service (and state enforcement agencies) makes a great effort to enforce all regulations regardless of the location of a particular violation.

Public Comment:	*Commenter:*	*Affiliation:*
905H		Individual

Issue 3: *The National Park Service Should Conduct a Soundscape Study at Glen Canyon National Recreation Area Comparable to the Zion National Park Study*

A *Comment*: No Record of Decision or *Final Environmental Impact Statement* for the Glen Canyon National Recreation Area Watercraft Management Plan should be issued until a complete soundscape study, comparable to the Zion soundscape study (Wyle Report, WR 02-07, The Soundscape in Zion National Park, Contract No. 1443CX2000-98-038 [May, 2002]) has been done at Glen Canyon National Recreation Area, and its data considered in evaluation of all alternatives.

Response: **All alternatives in the *Final Environmental Impact Statement* now include plans to implement a soundscape management study and analysis in the future lake management plan. The soundscape management study would likely use methods similar to those used at Zion National Park. The National Park Service believes that the soundscape analysis in the *Draft* and *Final Environmental Impact Statements* adequately addresses the context, duration, and intensity of personal watercraft affects on the soundscape under each alternative.**

Public Comment:	*Commenter:*	*Affiliation:*
1391C	Sierra Club	Organization

Issue 4: *Wilderness Management and Natural Zone Goals Were Not Properly Considered in the Draft Environmental Impact Statement*

A Comment: Wilderness management in the Natural Zone is ignored in "other relevant Park planning methods" even though it is stated as a goal in Glen Canyon National Recreation Area's general management plan. The "Impairment Analysis Method" section (page 162-163) considers general management plan goals as one of the elements used to evaluate the potential for impairment. Only alternative "C" correlates satisfactorily with the values of wilderness management.

Response: The noise impacts on the Natural Zone were determined to be adverse and ranged from minor to moderate within a mile of the shoreline (refer to the noise analysis in the "Soundscapes" section of the "Environmental Consequences" chapter).

The *Final Environmental Impact Statement* contains modified text that reflects the following: Personal watercraft sound impacts wilderness values of solitude and natural quiet because sound carries beyond the shoreline and is heard at some distance within the Natural Zone. The sound is heard up to a maximum of 2 miles from the source over a flat surface, but the topography surrounding Lake Powell is not flat. Assuming that a natural barrier to the sound would exist where there is an elevation change of 50 feet (approximate height of a five-story building), approximately 16,000 acres would be affected (between 3,700 feet to 3,750 feet in elevation). This equals 2.3% of the Natural Zone (668,670 acres). Time of day and season of use would also reduce the level of noise in the Natural Zone because the noise would not be continuous, would be encountered only during daylight hours, and would be minimal between October and May.

Although noise does intrude on desired wilderness and Natural Zone soundscape values, the inescapable juxtaposition of the Natural Zone and the Recreation and Resource Utilization Zone make it impossible to avoid all adverse impacts on the Natural Zone/wilderness soundscape. As shown above, only 2.3% of the Natural Zone's area would be affected, and those soundscape effects would be offset even further by diurnal/nocturnal and seasonal reductions in watercraft noise.

There is a potential conflict in the management objectives between the Recreation and Resource Utilization Zone and the Natural Zone that is extremely difficult to avoid because the zones are adjacent to each other. However, the percentage of the Natural Zone that is adversely affected by personal watercraft noise, as shown in the preceding paragraph, is small. The noise generated by watercraft in the Recreation and Resource Utilization Zone, including personal watercraft, is consistent with Glen Canyon National Recreation Area's enabling legislation "to provide for public outdoor recreation use and enjoyment of Lake Powell and the lands adjacent thereto."

The modified preferred alternative (alternative B) provides for a three-year pilot study to further evaluate personal watercraft use areas. Potential restrictions of personal watercraft use in other locations of the recreation area would be evaluated during the pilot study. The purpose of the pilot study and a description of how it would be implemented are provided in appendix C. In addition, the preparation of a lake management plan, which was included in all alternatives in the *Final Environmental Impact Statement*, will provide an opportunity for the National Park Service to further evaluate impacts of all lake users on all resources, including the soundscape.

Public Comment:	*Commenter:*	*Affiliation:*
1393D, 1393R, 1393W	Environmental Protection Agency	Public Agency
1391L	Sierra Club	Organization
1180D		Individuals

Issue 5: *Request for Median Quiet Intervals*

A Comment: The *Final Environmental Impact Statement* should incorporate a supplemental metric, the "Median Quiet Interval " (MQI) to analyze noise impacts. MQI is defined as the median time interval where there is no motorized noise-intrusion audible. This would provide a key, "user-friendly" impact assessment indicator of how extended or truncated is the typical opportunity of Park users to experience natural quiet unimpaired.

Response: The following is an explanation of how to determine Median Quiet Interval: If one had a day-long recording, assuming standard and sensitive acoustic instrumentation were being used, one could identify all the intervals during the day that were free of human-caused sound. If those intervals were then arranged from the shortest to the longest (in hours, minutes, and seconds) and the center-most value, not the average value, was picked, one would have determined the median quiet interval for the period of time recorded - or a day in this case.

A soundscape management study, to be implemented in conjunction with the development of a lake management plan, would include a sound monitoring program. Data from the monitoring program could be used to develop the Median Quiet Interval referred to in the comment.

Public Comment:	*Commenter:*	*Affiliation:*
1391U, 1391E, 1391R	Sierra Club	Organization

Issue 6: *The Soundscape Analysis Should Fully Assess Aircraft Noise Contribution to Soundscapes*

A Comment: To provide a more complete soundscape analysis, noise data should be obtained at additional locations one to two miles from the shore, so that the total aircraft contribution can be fully - not just partially - assessed.

Response: All alternatives in the *Final Environmental Impact Statement* now include plans to implement a soundscape management study in the future lake management plan. The sound management study would include a monitoring program, which would be necessary to verify model results and assumed impacts of the eventual decision based on this *Final Environmental Impact Statement*. This comment provides some appropriate considerations regarding how monitoring could be conducted.

Public Comment:	*Commenter:*	*Affiliation:*
1391T	Sierra Club	Organization

Issue 7: *A Soundscape Baseline Without Watercraft Noise Needs to be Developed*

A *Comment*: Before reinstating jet skis, the National Park Service at a minimum needs to perform complete acoustic data collection and analysis throughout Glen Canyon National Recreation Area, sufficient for the National Park Service to assess the impacts of current and proposed personal watercraft and other watercraft usage on the natural soundscape. The baseline soundscape, without any personal watercraft/boat noise, must be documented.

Response: A summary of the NPS rulemaking and associated personal watercraft litigation is contained under "Personal Watercraft Regulatory Framework" in the "Purpose of and Need for Action" chapter. The National Park Service believes it has complied with the court order and has assessed the impacts of personal watercraft on those resources specified by the judge, as well as other resources that could be affected. These analyses were done for every applicable impact topic with the best available data, as required by CEQ regulations (40 CFR 1502.22). Where data was lacking, best professional judgment prevailed using assumptions and extrapolations from scientific literature, other park units where personal watercraft are used, and personal observations of park staff.

All alternatives in the *Final Environmental Impact Statement* now include plans to implement a soundscape management study and analysis in the future lake management plan. The sound management study would include a monitoring program, which would be necessary to verify model results and assumed impacts of the eventual decision based on this *Final Environmental Impact Statement*.

Public Comment:	*Commenter:*	*Affiliation:*
1391B	Sierra Club	Organization

Issue 8: *There Is a Need for a Soundscape Management Plan and Lake Management Plan at Glen Canyon National Recreation Area*

A *Comment*: The National Park Service should complete a "Soundscape Management Plan" for Glen Canyon National Recreation Area (as per Director's Order 47). It should also complete a "Lake Management Plan." The status and timeline for these plans should be included in the *Final Environmental Impact Statement*.

Response: All alternatives in the *Final Environmental Impact Statement* now include development of a lake management plan. The lake management plan would incorporate a soundscape management study. These park planning efforts would (1) describe the baseline natural ambient sound environment in qualitative and quantitative terms; (2) identify sound sources and sound levels consistent with park legislation and purposes; (3) identify the level, nature, and origin of internal and external noise sources; (4) articulate desired future soundscape conditions; and (5) recommend the approaches or actions that would be taken to achieve those conditions or otherwise mitigate noise impacts.

Public Comment:	*Commenter:*	*Affiliation:*
1391G	Sierra Club	Organization

Issue 9: *What Is Human Threshold of Hearing for Watercraft-Specific Frequencies?*

A *Comment*: What is the "human threshold of hearing" assumed for the watercraft-specific frequencies (in relation to understanding the "audibility calculations" cited on page 200)?

Response: Audibility, in general, may be defined as the evidence of sound detected by an average, attentive person. Audibility impacts, as reported in the effects analysis (refer to the "Environment Consequences" chapter) should be viewed within this general context. Technically, humans can hear sounds beginning at 0 decibel on an A-weighted scale (dBA). Humans can detect changes in sound pressure level that are 1-3 decibels in magnitude. Each frequency band in the spectrum emitted by a sound source is associated with a decibel level. Measured at a distance of 25 meters (82 feet) and operating in a "typical" fashion, a personal watercraft emits its highest maximum sound pressure level range in frequencies from 50 Hertz (Hz) to 1,250 Hz. The peak frequency emitted is about 130 Hz and 70 dBA. This is well within the range of frequencies that humans hear very well. Humans can hear frequencies emitted by personal watercraft below 50 Hz and above 1,250 Hz, but decibel levels decline in both instances. For comparison, a boat typically operates in the same frequency spectrum at the same decibel levels as a personal watercraft, except it maintains a higher sound pressure level at frequencies below about 130 Hz. People tend to hear less well at this end of the frequency spectrum. V-8 "muscle" boats show considerably higher sound pressure levels throughout the frequency range compared to other boats and personal watercraft. All of this is accounted for in the modeling of audibility (refer to the "Methodology" section in the "Environmental Consequences" chapter).

Public Comment:	*Commenter:*	*Affiliation:*
1391N	Sierra Club	Organization

Issue 10: ***A Noise Analysis Should Be Conducted in September When Personal Watercraft Use Peaks***

A *Comment*: Why isn't noise analysis also provided for the personal watercraft peak month of September (when personal watercraft use peaks at 38% and other watercraft uses decline to 62% - tables 11 and 16). Please provide this data.

Response: The Harris Miller Miller & Hanson (HMMH 2002) study was commissioned by the National Park Service to provide data for use in the *Draft* and *Final Environmental Impact Statements*. As shown in table 13, 48% of the lake was characterized as experiencing high sound levels in August; thus, August presented the best opportunity to measure maximum noise levels in the recreation area.

Public Comment:	*Commenter:*	*Affiliation:*
1391N	Sierra Club	Organization

Issue 11: ***Aircraft Noise Is Not Considered in the Definition of Negligible Impact to Soundscapes***

A *Comment*: There appears a major error regarding the "Negligible" paragraph in the Impact Threshold Definitions on page 201, because there is no reference to the aircraft noise contribution. It is likely not negligible in many areas of Glen Canyon National Recreation Area.

Response: The definition of negligible in the *Final Environmental Impact Statement* refers to "human-caused noise," which includes aircraft noise. The analysis of soundscape impacts focuses on the impacts of personal watercraft on the soundscape, while the cumulative analysis addresses impacts on the soundscape from all sources, including aircraft. The cumulative soundscape impact assessment is characterized as a minor to moderate adverse effect under all the alternatives. As a result, there does not appear to be a misapplication of the negligible threshold definition.

Public Comment:	*Commenter:*	*Affiliation:*
1391O	Sierra Club	Organization

Issue 12: ***Lack of Quantitative Definitions for Soundscape Impact Thresholds and Impairment Definition***

A *Comment*: Non-quantified terms ("low levels," "mostly," "predominate," "rarely," "medium levels," "infrequently," "short durations," "high levels," "occasionally," often," "medium duration," "almost all," and "extended periods") used in the threshold definitions are all ultimately ephemeral and only qualitative. Hence, they are subject to arbitrary and capricious interpretation in rulemaking and/or determinations as to significant impact. This applies to the impairment definition and determination as well.

Response: The *Final Environmental Impact Statement* soundscape analysis, including the threshold definitions, was modified to minimize ambiguity and clarify the determinations of personal watercraft soundscape impacts.

Public Comment:	*Commenter:*	*Affiliation:*
1391O, 1391Q	Sierra Club	Organization

Issue 13: ***A Report Entitled "Drowning in Noise" Was Not Applied in the Draft Environmental Impact Statement***

A *Comment*: Nowhere in the *Draft Environmental Impact Statement* is there genuine application of a cited key Report: "Drowning in Noise: Noise Costs of Jet Skis in America" - a Report for the Noise Pollution Clearing house, by Charles Komanoff and Howard Shaw, (April, 2000). The *Final Environmental Impact Statement* should specifically apply the key findings of the "Drowning in Noise" Report, including "Robinson's Equation" to assess perceived noise impacts from rapid noise level fluctuations.

Response: *Drowning in Noise: Noise Costs of Jet Skis in America* (Komanoff and Shaw 2000) is cited in the *Draft* and *Final Environmental Impact Statements* in the discussion of soundscapes in the "Purpose of and Need for Action" chapter. Information in the *Drowning in Noise* report, specifically in relation to noise measurement, is consistent with NPS findings. However, NPS findings are appropriately based on actual on-site measurements rather than on the *Drowning in Noise* report. Other interpretations, discussions, or conclusions in the *Drowning in Noise* report are more applicable to an assessment of visitor experience. The *Final Environmental Impact Statement* contains an added discussion about the qualitative effect of the distinctive personal watercraft sound signature (refer to the "Visitor Use and Experience," "Methodology" section of the "Environmental Consequences" chapter).

"Robinson's Formula," according to the *Drowning in Noise* report, is a quantified approach to "annoyance" as a function of variability in the sound source, not just its decibel level. The *Final Environmental Impact Statement* describes the nature of the personal watercraft as a sound source, including fluctuations associated with its use. Thus, the phenomenon of variability is reported as part of the existing impact on the soundscape from personal watercraft. It is inherent in the effects analysis wherever an adverse impact is reported for natural sound. The major application for Robinson's Formula, or at least for recognizing the concept behind it, is in the description of visitor impacts. Where personal watercraft are audible, the interpretation of whether or not or to what degree visitors are annoyed is related at least in part to sound fluctuation. There is no question that personal watercraft sound, as characterized, is annoying to some visitors as is conveyed in the visitor experience section. Given that disclosure, and the large variability in circumstances that could be modeled using Robinson's Formula, it is unnecessary to actually do the arithmetic as suggested in this comment. Rather, it is helpful to look at the operational parameters that cause the fluctuation and the annoyance, and to develop mitigation measures that would reduce or eliminate them. Refer to the responses to comments in the "Visitor Use and Experience" section of this volume for additional information.

Public Comment:	*Commenter:*	*Affiliation:*
1391F, 1391P	Sierra Club	Organization
1002F	Bluewater Network	Organization

Issue 14: ***Additional Information Regarding Personal Watercraft Noise Abatement Technology and Design Needs to be Added to the Final Environmental Impact Statement***

A *Comment*: Since 1998, the personal watercraft companies have reduced engine sound levels by up to 70% and have introduced design changes to not only reduce engine sound intensity, but to reduce the sound pitch that some claim to be annoying.

Response: The National Park Service appreciates the information regarding new noise suppression designs being used by some personal watercraft manufacturers. The *Final Environmental Impact Statement* refers to the potential noise abatement factors and acknowledge that future designs may mitigate sound impacts (see the "Affected Environment" chapter).

Public Comment:	*Commenter:*	*Affiliation:*
1344L	Personal Watercraft Industry Association	Organization

THREATENED AND ENDANGERED SPECIES

Impacts of Personal Watercraft Use

Issue 1: ***Personal Watercraft Use May Impact Critical Habitat***

A *Comment*: I would like to point out that the pollution from these machines is thought by some to pollute the shore lines in a way similar to a "bathtub ring". The area around a body of water, from the shore line inland and out into the water, is a critical habitat for wildlife.

Response: The National Park Service defined the evaluation area for threatened, endangered, and special-concern species as the 3,700-foot water surface elevation (the shoreline zone) and uplands within 500 feet of Lake Powell's 3,700-foot water surface elevation or within 500 feet of river shorelines. Much of the shoreline inland and out to the water is subject to changes in water levels that fluctuate nearly 50 feet vertically and 1,000 feet horizontally during a typical year. Vegetation is generally scarce and poorly developed, and unstable water levels associated with reservoir operations provide limited opportunities for vegetation to grow. Development and long-term maintenance of sensitive vegetation communities are dependent on the suitable combination and distribution of adequate conditions such as soil, slope, water depth, and hydrology. The fluctuation of the lake, which either floods or drains shoreline areas, makes it difficult for sensitive vegetation and wildlife species to survive. This is particularly apparent during periods of prolonged low-water, where soil conditions allow many fast-growing annual and perennial species, such as saltcedar, to invade the exposed shoreline because they are more tolerant of the conditions.

As defined in the provisions of the *Endangered Species Act*, critical habitat is a specific geographic area that is essential for the conservation of endangered or threatened species. The *Draft* and *Final Environmental Impact Statements* identify and delineate the geographic extent of the critical habitat established for four endangered fish species: razorback sucker, Colorado pikeminnow, humpback chub, and bonytail chub (see table 16 under the "Threatened, Endangered, and Special-Concern Species" section in the "Affected Environment" chapter). Critical habitat for these fish at sensitive river inlets would not likely be adversely affected by pollution because use in river inlets during peak season is typically less than 5% and does not occur over extended periods of time. Pollutants from personal watercraft and other motorized watercraft are more intense closer to the marinas than in river inlets where critical habitat (delineated by the U.S. Fish and Wildlife Service) is present (*Federal Register* 50 CFR part 17, March 21, 1994). Critical habitat for Mexican spotted owl, the southwestern willow flycatcher, the California condor, and the Navajo sedge are also present in Glen Canyon National Recreation Area, but are not located within the personal watercraft use area.

In addition, the U.S. Fish and Wildlife Service (see letter 01137 in this volume), has concurred with the NPS determination that the three alternatives, including alternative B in the *Draft Environmental Impact Statement* are "not likely to adversely affect" threatened and endangered species or critical habitat. The modified preferred alternative (alternative B) provides further mitigation measures to protect park resources. Under the modified preferred alternative (alternative B), restrictions on carbureted two-stroke engines in 2012 would result in beneficial impacts on the overall aquatic ecosystem and on endemic fish populations. Based on the analysis presented, the National Park Service finds that the modified preferred alternative (including the provision for continued personal watercraft use), if implemented, would not result in an impairment of threatened or endangered species or critical habitat.

Public Comment:	*Commenter:*	*Affiliation:*
1177A, 1177E		Individual

Issue 2: *Incomplete Assessment of Impacts on Wildlife and Certain Threatened and Endangered Species*

A Comment: The *Draft Environmental Impact Statement* does not adequately assess the adverse effects that personal watercraft use has or may have on some threatened and endangered bird species such as peregrine falcons, bald eagles, and western yellow-billed cuckoos.

Response: Information on the distribution and potential presence of peregrine falcons, bald eagles, and western yellow-billed cuckoos was obtained from habitat inventories, databases, and other research projects conducted for Glen Canyon National Recreation Area planning purposes, as well as through observations of qualified experts and recreation area staff. The National Park Service has consulted and coordinated with the U.S. Fish and Wildlife Service, the Arizona Game and Fish Department, and the Utah Division of Wildlife Resources (see U.S. Fish and Wildlife Service responses in appendix H.1, and Arizona Game and Fish Department and Utah Division of Wildlife Resources responses in appendix H.2 and appendix H.3, respectively).

Each of these species has been assessed in the *Final Environmental Impact Statement* (see the "Methodology" and "Wildlife and Wildlife Habitat" sections in the "Environmental Consequences" chapter). Factors that affect the degree of interaction (i.e., the effects of duration and intensity) with these species are influenced by the species' lack of critical habitat designation in the evaluation area, transient or seasonal use of the recreation area by the species, and limited distribution of sensitive habitat. Therefore, exposure of these species during periods of potential personal watercraft use is limited. The National Park Service believes that the *Draft* and *Final Environmental Impact Statements* adequately address the potential behavioral changes of these species in proportion to the potential exposure to personal watercraft use under each alternative.

In addition, the U.S. Fish and Wildlife Service has concurred with the NPS determination that the three alternatives (including alternative B, the preferred alternative) are "not likely to adversely affect" threatened and endangered species or critical habitat (see letter 01137 in this volume). The modified preferred alternative (alternative B) in the *Final Environmental Impact Statement* provides further mitigation measures to protect park resources. Under the modified preferred alternative, restrictions on carbureted two-stroke engines in 2012 would likely result in beneficial impacts on the overall aquatic ecosystem and on endemic fish populations. Based on the analysis presented, the National Park Service finds that the modified preferred alternative (alternative B) (including the provision for continued personal watercraft use), if implemented, would not result in an impairment of threatened or endangered species or critical habitat.

Public Comment:	*Commenter:*	*Affiliation:*
1168G	American Canoe Association	Organization

Regulations, Methodologies, and Assumptions

Issue 1: ***Lack of Site-Specific Data***

A Comment: The *Draft Environmental Impact Statement* section on personal watercraft impacts upon threatened and endangered (T/E) species also lacks sufficient site specific data. Once more, it appears that no research was conducted to determine personal watercraft impacts upon the federally listed species found at Glen Canyon. However, despite the NPS's lack of data, the Park Service concludes that its preferred alternative would not "adversely affect" T/E species. Again, Bluewater Network believes the lack of pertinent information makes it impossible for the National Park Service to support this conclusion.

Response: A summary of the NPS rulemaking and associated personal watercraft litigation is contained under "Personal Watercraft Regulatory Framework" in the "Purpose of and Need for Action" chapter. The National Park Service believes it has complied with the court order and has assessed the impacts of personal watercraft on those resources specified by the judge, as well as other resources that could be affected. These analyses were done for every applicable impact topic with the best available data, as required by CEQ regulations (40 CFR 1502.22). Where data was lacking, best professional judgment prevailed using assumptions and extrapolations from scientific literature, other park units where personal watercraft are used, and personal observations of park staff.

In addition, the U.S. Fish and Wildlife Service has concurred with the NPS determination that the three alternatives (including alternative B, the preferred alternative) are "not likely to adversely affect" threatened and endangered species or critical habitat (see letter 01137 in this volume). The modified preferred alternative (alternative B) in the *Final Environmental Impact Statement* provides further mitigation measures to protect park resources. Under the modified preferred alternative, restrictions on carbureted two-stroke engines in 2012 would likely result in beneficial impacts on the overall aquatic ecosystem and on endemic fish populations. Based on the analysis presented, the National Park Service finds that the modified preferred alternative (alternative B) presented in the *Final Environmental Impact Statement* (including the provision for continued personal watercraft use), if implemented, would not result in an impairment of threatened or endangered species or critical habitat.

Public Comment:	*Commenter:*	*Affiliation:*
1002X	Bluewater Network	Organization

VISITOR CONFLICTS AND SAFETY

Affected Environment

Issue 1: *National Safety Data Not Adequately Assessed*

A Comment: A flaw in the *Draft Environmental Impact Statement* is its failure to adequately assess the safety threat posed to park visitors by personal watercraft use. The EA does not adequately analyze existing accident data available from the United States Coast Guard (USCG). The information considered in the *Draft Environmental Impact Statement* with respect to safety is limited to 1997 data on accident numbers and injuries and the 1998 National Transportation Safety Board (NTSB) report. More diligent research into the USCG Boating Accident Report Database (BARD) would have also found that personal watercraft, which comprise only 6.5% of vessels, are involved in 55% of all vessel-on vessel collisions, that 70% of all personal watercraft accidents are collisions, and that personal watercraft are more than 3 times as likely to strike a person swimming in the water as other vessels.

Response: Incidents involving watercraft of all types, including personal watercraft, are reported to and logged by NPS staff. A very small proportion of incidents on the lake are estimated to go unreported. The accident data for the three-year period (1999 through 2001) displays a consistent pattern and differs from nationally reported results for all watercraft. In the "Visitor Conflicts and Visitor Safety" section of the "Affected Environment" chapter, it is reported that personal watercraft represent 26% of the total boat days and 18% of the total operating hours on the lake but represented 14% of all watercraft accidents over the three-year time period. While personal injury rates for personal watercraft were somewhat higher, they did not exceed 24% of all watercraft personal injuries, or approximately equal to their representation in the population of all watercraft.

Accident information generated by the U. S. Coast Guard has been incorporated into the "Summary of National Information of the Effects of Personal Watercraft" section of the "Purpose of and Need for Action" chapter.

Public Comment:	*Commenter:*	*Affiliation:*
1168D	American Canoe Association	Organization

B Comment: The *Draft Environmental Impact Statement* discloses that personal watercraft accounted for 26% or 218,882 boat days on Lake Powell in 2001. The *Draft Environmental Impact Statement* also makes the claim that "Nationally, some data suggest that personal watercraft have higher accident rates that other watercraft." While this may or may not be true, Lake Powell specific data show that personal watercraft are under represented in accident/death rates! Why mention what some data "suggest" when actual, on site data show just the opposite?

Response: The "Issues and Impact Topics" section of the "Purpose of and Need for Action" chapter addresses potential issues and impact topics that were brought forth during public scoping and through the interdisciplinary planning process. Under NPS *Director's Order 12*, issues are defined as problems that any of the alternatives may cause, or they may be questions, concerns, problems, or other relationships, including beneficial ones. Issues alert the reader as to what the environmental problems might be if an action is taken. The national research presented in the "Purpose of and Need for Action" chapter was used as part of the scoping process to help identify potential issues related to personal watercraft use. Actual data for Glen Canyon National Recreation Area are available and were used for the analysis and compared to the national data in order to address the issue. It is the obligation of the agency to respond to reasonable issues that fall within the scope of a federal action.

Public Comment:	*Commenter:*	*Affiliation:*
1239K	Utah Shared Access Alliance	Organization

Issue 2: ***Draft Environmental Impact Statement Does Not Address Higher Rate of Personal Watercraft Fires and Explosions***

A *Comment*: The analysis downplays the threat personal watercraft pose to the visiting public because it clearly lacks discussion or reference to several important studies and reports. There is no discussion regarding personal watercraft fire and explosion hazards. Recent USCG safety data suggest that both the number of fires and the injuries associated with those fires have increased more than 300% since 1995. A recent study by the University of Florida (UF) found that personal watercraft represent a greater threat to child safety than conventional boats.

Response: According to the National Marine Manufacturers Association (NMMA 2001b), personal watercraft manufacturers have sold roughly 1.2 million watercraft during the last 10 years. Of the 1.2 million personal watercraft sold, the U.S. Coast Guard had only 90 reports of fires/explosions from 1995 through 1999. This is less than 1% of personal watercraft reporting problems associated with fires/explosions. As far as the recall campaigns conducted by Kawasaki and Bombardier, the problems that were associated with fuel tanks were fixed. Kawasaki conducted a recall for potentially defective fuel filler necks and fuel tank outlet gaskets on 23,579 personal watercraft between 1989 and 1990. The fuel tank problems were eliminated in Kawasaki's newer models, and the 1989 and 1990 models are most likely not in use anymore, since the average operating life of a personal watercraft is 5 to 10 years, depending on the source. The Personal Watercraft Industry Association believes the typical operating life of a personal watercraft rental is three years and approximately five to seven years for a privately owned vessel (PWIA 2002a). Bombardier also did a recall for its 1993, 1994, and 1995 models to reassess possible fuel tank design flaws. However, the number of fuel tanks that had to be recalled was a very small percent of the 1993, 1994, and 1995 fleets because fuel tank sales only amounted to 2.16% of the total fleet during this period (USCG n.d.). The replacement fuel tanks differed from those installed in the watercraft subject to the recall in that the replacement tanks had revised filler neck radiuses. Also, the installation procedure now requires revised torque specifications, and the fuel system must successfully complete a pressure leak test. Bombardier found that the major factor contributing to personal watercraft fires/explosions was over-torquing of the gear clamp. Bombardier was legally required by the Coast Guard to fix 9.72% of the recalled models. Out of 125,349 recalls, the company repaired 48,370 units, which was approximately 38% of the total recall.

Fuel tank and engine problems that could be associated with personal watercraft fires have been reduced since the National Marine Manufacturers Association set requirements for meeting manufacturing regulations established by the Coast Guard. Many companies even choose to participate in the more stringent Certification Program administered by the association. The association verifies the boat model lines annually, or whenever a new product is put on the market, to ensure that they satisfy not only Coast Guard regulations but also the more rigorous standards based on those established by the American Boat and Yacht Council. There is no indication in park accident records that personal watercraft represent higher fire or explosion hazards than other watercraft.

Public Comment:	*Commenter:*	*Affiliation:*
1002AB, 1002G	Bluewater Network	Organization

Boater Education

Issue 1: *Lake Permit and Education Should be Mandatory*

A Comment: I believe the basic problem is reduction of user conflicts. Perhaps a lake permit could be made a requirement, with a mandatory education pamphlet and a short test to make a clear message to users how they can use the lake without detracting too much from other use.

Response: The states of Arizona and Utah mandate the current operational age of personal watercraft users. The licensing of boat or personal watercraft operators rests with the state governments and is not the mandate of the federal government. Currently the state of Utah provides an extensive and nationally recognized mandatory education program for personal watercraft users. The National Park Service will continue to support this existing program. In addition, under the modified preferred alternative (alternative B), enhanced educational materials and programs highlighting personal watercraft issues would be distributed to the public.

Public Comment:	*Commenter:*	*Affiliation:*
200B, 821B, 7D, 383A, 835A, 387B, 389A, 1288B, 240B, 226A, 112A, 1183A, 903B, 317B, 1087C		Individual

Impacts from Other Vessels

Issue 1: *Flat-Wake Areas for Only One Class of Watercraft Are Unsafe*

A *Comment*: There is no rationale that would require personal watercraft to operate at flat-wake speeds in areas where conventional boats could travel at unlimited speeds. personal watercraft, in fact, produce fewer waves as a result of their operation, and therefore create less of an erosion problem. Forcing one type of boat to operate at flat-wake speeds poses serious health risks for their operators.

Response: The plan was not designed to determine if personal watercraft caused more environmental damage to park resources than other boats, but rather, to determine if personal watercraft use was consistent with Glen Canyon National Recreation Area's enabling legislation and management goals and objectives. The overall objective is to meet the terms of the settlement agreement between Bluewater Network and the National Park Service (see "Introduction" in the "Purpose of and Need for Action" chapter). An analysis was done on the management of personal watercraft in order to meet the terms of the settlement agreement. With completion of this *Final Environmental Impact Statement*, the National Park Service may either take action to adopt special regulations to manage personal watercraft use at Glen Canyon, or may choose to discontinue personal watercraft use.

The analysis for each alternative was based on the best information available. Under alternative B (the modified preferred alternative), the management actions for the San Juan, Escalante, Colorado, and Dirty Devil Rivers would be implemented to reduce visitor conflicts with river rafters, fishermen, and backcountry hikers; promote opportunities for visitor enjoyment; and ensure visitor safety.

Under Utah State law, all boaters must operate at flat-wake speeds or idle speed within 150 feet of another boat, a person in or floating on the water, a waterskier (except those being towed), a shore fisherman, a launching ramp, a dock, or a designated swimming area. Arizona State law requires all boaters to operate at flat-wake speeds within 60 feet of another vessel. The modified preferred alternative (alternative B) addresses signing, buoys, and boater education that will encourage other watercraft operators' observance of safe boating practices.

Public Comment:	*Commenter:*	*Affiliation:*
1175C	American Watercraft Association	Organization
Form 1		Individual

Impacts of Personal Watercraft Use

Issue 1: *Concerns with the Draft Environmental Impact Study Evaluation of Personal Watercraft Safety Issues*

A *Comment*: Impact assessment for visitor conflicts and safety is inadequate. The *Draft Environmental Impact Statement* contradicts itself in the comments for alternative C. The impression left is that this is not an objective assessment, but rather a biased attempt to support a preselected action, not based in fact. How can the *Draft Environmental Impact Statement* acknowledge a 20% reduction in accidents (direct, beneficial, short-term, moderate) in one sentence and in the next sentence allege that in the long term accidents would be at least as high as Alt A?? This is utterly illogical.

Response: The analysis of personal watercraft use assumed that, with a ban on personal watercraft, the total number of watercraft operating hours on the lake would be decreased. Because personal watercraft and other watercraft have similar accident rates on the lake, the number of total accidents would be reduced proportional to the reduction in personal watercraft operating hours. This, however, would be a short-term effect. Based on national park system use trends, it is assumed that total watercraft operating hours under alternative C would recover by 2012 to use levels similar to the range predicted under alternatives A and B. This would be due to either natural growth in visitation (assuming a 2% annual increase in use) or increased visitation by individuals who previously avoided the recreation area because of personal watercraft disturbance and choose to visit in their absence.

This would result in a long-term accident rate under alternative C that would be similar to the long-term rate under alternative A.

Public Comment:	*Commenter:*	*Affiliation:*
3E		Individual

VISITOR USE AND EXPERIENCE

Affected Environment

Issue 1: ***Survey Concerning Visitor Satisfaction Doesn't Take Into Consideration People Who Don't Recreate at Glen Canyon National Recreation Area Due to Motorized Activity***

A Comment: The University of Minnesota survey does not include potential visitors who do not recreate at Glen Canyon National Recreation Area because of the way it is currently managed. The results of the survey present a skewed conclusion that there is little support for a ban on personal watercraft.

Response: There is both documented and anecdotal evidence that a segment of the recreating public chooses not to visit Glen Canyon National Recreation Area because of conditions that they expect or perceive to be unacceptable. While existing data is not sufficient to quantitatively predict the effect of personal watercraft management actions on visitor behavior, the available data and the opinion of NPS professionals suggest that a segment of the recreating public would choose to visit the recreation area if there were no personal watercraft, or personal watercraft use was curtailed over portions of the lake.

Using this professional judgment and the methodology described in the "Environmental Consequences" chapter of the *Final Environmental Impact Statement*, the environmental analysis evaluates the expected effect on each segment of the visiting public.

Public Comment:	*Commenter:*	*Affiliation:*
1002Y	Bluewater Network	Organization
1180F		Individual

Issue 2: ***Concerns with Draft Environmental Impact Statement Evaluation of Personal Watercraft Safety Issues***

A *Comment*: The conclusions of the *Draft Environmental Impact Statement* concerning motorized personal watercraft safety relative to other types of watercraft hinge on the percentage of personal watercraft accidents (14%) and personal injuries (20%) versus the estimation of personal watercraft boat days in 2001 (26%). James et al. reports that only 22% of personal watercraft users listed personal watercraft as their primary watercraft. Many personal watercraft spend significant time being towed or carried by their primary watercraft. Simply multiplying the estimated number of personal watercraft by the average length of stay substantially overstates actual personal watercraft use. Given the size of Lake Powell, it is fair to estimate that personal watercraft belonging to the 78% of parties using other boat(s) as primary watercraft are being towed or carried for at least 40% of the average length of stay for personal watercraft. Adjusting for this factor (using the data in table 16, p.127) gives an estimate of 151,446 personal watercraft boat days out of 773,154 total, or 19.6% of total. The "Water Quality" section of the *Draft Environmental Impact Statement*, personal watercraft engine hours are estimated at only 18% of total (table 29, p.168).

Response: The environmental analysis presented in the "Visitor Conflicts and Visitor Safety" section in the "Environmental Consequences" chapter has been changed in the *Final Environmental Impact Statement* to reflect that personal watercraft account for 18% of all watercraft operating hours and represent 14% of all accidents and 20% of personal injuries.

Public Comment.	*Commenter:*	*Affiliation:*
1180C		Individual

Issue 3: *Additional Information Needed on the Natural Zone and the Recreational and Resource Utilization Zone*

A *Comment*: The *Final Environmental Impact Statement* should include a map that identifies the Natural Zone and the Recreation and Resource Utilization Zone in the analysis area, and include additional detail regarding the purposes and objectives for these two zones. The impact of each alternative on whether the Natural Zone qualifies for wilderness designation, as recommended in the last *Management Plan*, should be described in the document.

Response: A map of Glen Canyon National Recreation Area's management zones has been added to the "General Project Setting" section of the "Affected Environment" chapter in the *Final Environmental Impact Statement*, along with an additional description of the zones' objectives. See comments and responses in the "Soundscapes" section of this volume 2.

Public Comment:	*Commenter:*	*Affiliation:*
1393Z	Environmental Protection Agency	Public Agency

Impacts of Personal Watercraft Use

Issue 1: *Alternative B Denies the Public Use and Enjoyment of River Tributaries, and Restrictions Are Not Justified Based on the Level of Use*

A Comment: The *Draft Environmental Impact Statement* ignores the fact that muscle-powered users have the vast bulk of the Colorado river system plus the entire Grand Canyon available for their exclusive use. This information would have helped decision makers and the general public evaluate alternatives. We point out that sharing this relative short section, which is regularly inundated to become flat water at high lake levels should not be too much of a burden to those who seek a "primitive" or nonmotorized recreational experience. The same comments apply to the affected sections of the Escalante, Dirty Devil, and San Juan rivers. Alternative B unfairly denies the public the use and enjoyment of these areas. The decision to adopt alternative B, in light of the lack of documented harm to the environment, is arbitrary and capricious and contrary to the management mandate contained in the enabling legislation.

Response: Upstream river travel by personal watercraft and other vessels is already restricted through the Superintendent's Compendium as specified under alternative A, which is the continuation of current conditions. See table 4 for specific restrictions. These areas of the rivers were restricted because of a high potential for visitor conflict and to protect visitor health and safety. The management actions under the modified preferred alternative (alternative B) for the San Juan, Escalante, Colorado, and Dirty Devil Rivers would additionally restrict travel downstream on the same stretches of river as under alternative A, and would also restrict access in both directions on 10 additional miles of the Dirty Devil River and 23 miles on the Colorado River. Based on the best available information, the National Park Service would implement these restrictions on the rivers to reduce visitor conflicts with river rafters, fishermen, and backcountry hikers; promote opportunities for visitor enjoyment; and ensure visitor safety.

Public Comment:	*Commenter:*	*Affiliation:*
1239N	Utah Shared Access Alliance	Organization

Issue 2: *Protection of Resources Under the Recreation Area's Enabling Legislation and General Management Plan*

A Comment: The map on page 129 and table 17 on page 128 do not provide information about the use of all tributaries since those tributaries are not broken out of the figures. For example, use zone 9 includes the Escalante River along with the reservoir above and below the river. There is no information regarding the level of use on the Escalante River or how much of the river is actually used. This capability to determine whether the restrictions under alternative B would be effective.

Response: Figure 13 and table 19 represent the broad management zones used by Glen Canyon National Recreation Area for parkwide use analysis. The University of Minnesota study (James 2000) used these zones to capture visitor trip itineraries and was not used to analyze use or management actions proposed for the tributary river canyons. Table 21 provides use estimates that are specific to the areas of proposed action.

Public Comment:	*Commenter:*	*Affiliation:*
1245D	Sierra Club, Utah Chapter	Organization

Issue 3: *There Is Inadequate Data on Perceptions of Nonmotorized Watercraft Users*

A Comment: The *Draft Environmental Impact Statement* does not adequately examine the adverse impacts of personal watercraft use to canoeist and kayakers. There is no evidence that the National Park Service surveyed paddler perceptions of Lake Powell, the lake's appeal (or lack thereof) to canoeists and kayakers, or how personal watercraft impact their visitor experience. The *Draft Environmental Impact Statement* appears to rely on visitation data and surveys that reflect little input from paddlers.

Response: The University of Minnesota survey (James 2000) representatively sampled all boaters in order to develop the analysis presented in the report. The sample included nonmotorized watercraft users, including canoeists and kayakers; these users represented approximately 4% of watercraft in the survey. While this is a small sample, the analysis of effects on these user groups is qualitatively addressed in the "Visitor Experience" section of the "Environmental Consequences" chapter. The best available data and professional judgment were used to analyze the effects of personal watercraft on recreation area visitors.

Public Comment:	*Commenter:*	*Affiliation:*
1168E	American Canoe Association	Organization

Issue 4: ***Conclusions Drawn from University of Minnesota Study Are Incorrect. It Does Not Include a National Sample and Underestimates Public's Perception of Personal Watercraft Impact***

A Comment: The University of Minnesota study (James 2000) states that personal watercraft do not impact the recreational experience of national recreation area visitors, yet their own results appear to reveal the opposite. On page six of the study, table four shows that three of the top four problems cited by non-personal watercraft users are related to personal watercraft operation (unsafe personal watercraft operation, personal watercraft congestion, personal watercraft conflicts). Without a complete, fair, and comprehensive public opinion survey which includes the beliefs of park visitors who may be forced out of Glen Canyon due to personal watercraft operation, the *Draft Environmental Impact Statement*' sections on visitor use and visitor conflicts are incomplete.

Response: The University of Minnesota study was conducted using standard social science methodologies and received peer review of its conclusions. The study was limited to visitors to Glen Canyon National Recreation Area. The results of the study were combined with other data and professional judgment that enabled qualitative predictions of the effects of the alternatives on the full range of recreation area visitors and potential visitors.

Public Comment:	*Commenter:*	*Affiliation:*
1002Y	Bluewater Network	Organization

Regulations, Methodologies, and Assumptions

Issue 1: *Assumptions that Personal Watercraft Use Would be Replaced by Other Watercraft Use Is Unsubstantiated and Visitors Using More Than One Type of Watercraft Were Not Counted Twice*

A *Comment*: Table 3 states," Visitors who did not use personal watercraft would generally perceive minor to moderate, short-term benefits. These benefits would decline to negligible in the long term. Other cumulative effects would be negligible." There does not seem to be any rationale for this conclusion. Why does the National Park Service conclude there would only be a perception of "moderate, short-term benefits" which would decline to "negligible in the long term?" What research yielded such a result? At one point the National Park Service asserts that there would be approximately a 25% decrease in watercraft if personal watercraft are banned from the reservoir. This would be dramatic in some areas. The National Park Service at one point concludes that this drop in watercraft would eventually disappear and that former personal watercraft users would soon return with other watercraft. This requires that the National Park Service knows that all of the personal watercraft users wished only to recreate in the Glen Canyon National Recreation Area and would soon replace the personal watercraft with other watercraft and return. This totally discounts that some if not most personal watercraft users choose primarily the form of recreation and only secondarily choose where to recreate. It is entirely more likely that personal watercraft users will seek sites where such use is permitted.

The *Draft Environmental Impact Statement* also notes that the personal watercraft is often only one of the watercraft that arrives with group of users. Powerboat users and house boat users are also personal watercraft users. From reading the *Draft Environmental Impact Statement* it is not clear that users of more than one kind of watercraft do not get counted twice for some analyses. If half of all personal watercraft are part of a group of craft used by a single group of users, then the results of banning personal watercraft may result in fewer motorized watercraft users returning since half of the personal watercraft users were already using other watercraft on the reservoir.

Response: The analysis in the *Final Environmental Impact Statement* carries forward the assumption from the *Draft Environmental Impact Statement* that following a ban on personal watercraft the total number of watercraft operating hours on the lake would be decreased in the short-term. Based on national park system use trends, it is assumed, however, that total watercraft operating hours under alternative C would recover by 2012 to use levels similar to the range predicted under alternatives A and B. This would be due to either natural growth in visitation (assuming a 2% annual increase in use) or increased visitation by individuals who previously avoided the recreation area because of personal watercraft but who would choose to visit if personal watercraft were absent.

Public Comment:	*Commenter:*	*Affiliation:*
1245H	Sierra Club, Utah Chapter	Organization

Issue 2: *Personal Watercraft Ban Does Not Automatically Lead to Decrease in Use*

A *Comment*: The assumption that a personal watercraft ban at Glen Canyon will automatically result in a decrease in park visitation is highly questionable. NPS data shows that parks that ban personal watercraft may actually see increases in visitation. From the most recent visitation data (January through August), the National Park Service reports that at the 13 parks that banned personal watercraft on April 22, 2002, park visitation increased on average by 7% over 2001 counts. In fact, at Delaware Water Gap and Gateway, the two national recreation areas on the list, park visitation has actually increased by more than 10% as compared to last year. By contrast, from the same visitation data cited above, at the eight parks where personal watercraft use has continued, park visitation is down 10%. At Glen Canyon, park visitation is also down 10% from last year. These numbers clearly shows that personal watercraft bans do not automatically lead to reduced visitation.

Response: The *Final Environmental Impact Statement* has been changed and includes an analysis of use trends within units of the national park system compared to use trends within Glen Canyon National

Recreation Area. The analysis indicates that over the past decade, use within NPS units increased on average by 0.3% per year. Within parks that have characteristics that allow personal watercraft nearly similar to Glen Canyon (e.g., water-based, seashores and lakeshores, recreation areas, western parks, or large popular parks), use increased on average by 1.05% annually over the past decade. Use at units that allow personal watercraft increased by an average 0.26% annually. While personal watercraft use at Delaware Water Gap National Recreation Area and Gateway National Recreation increased at the rates noted in the comment, it should also be noted that these two areas sustained 1.2% and 4.1% average annual growth, respectively, over a 10-year period, compared with an average annual decrease of 4.8% and 2.6%, respectively, for Big Horn Canyon National Recreation Area and Glen Canyon National Recreation Area. There is no evidence that these trends were strongly influenced by the presence or absence of personal watercraft.

A visitor use forecast range of –2% and +2% average annual change was used in the *Final Environmental Impact Statement* to 2012. Using this range enables the impact analysis for resources, such as air and water quality, to be viewed in a range of use scenarios that will enhance the ability to make decisions. The effects of the alternatives on visitor experience and visitor safety continue to be analyzed qualitatively, so as not to be dependent on specific forecasts of visitor use.

Public Comment:	*Commenter:*	*Affiliation:*
1002AF	Bluewater Network	Organization

Issue 3: *Provide an Explanation of How Estimates of Personal Watercraft Use in the Tributaries Were Derived*

A *Comment*: What is the source of the estimates provided in table 18 on page 131 of the *Draft Environmental Impact Statement*? These show that the estimated use in the restricted areas is very small.

Response: The estimates are based on the observations of NPS staff who patrol the areas that are included within alternative B (the modified preferred alternative).

Public Comment:	*Commenter:*	*Affiliation:*
1245B	Sierra Club, Utah Chapter	Organization

Issue 4: *Need to Evaluate the Effects of Personal Watercraft on Nonmotorized Users*

A *Comment*: The National Park Service needs to consider the balance of recreational opportunities and whether or not it is providing an adequate range of recreational opportunities. In terms of this particular environmental impact statement the National Park Service needs to determine if personal watercraft contribute to the lack of human centered recreation. This could be difficult to assess but it could be attempted. The Glen Canyon National Recreation Area could review records for any organized permitted kayak or canoe trips on the reservoir. Such groups could be contacted and given a survey about the impacts of motorized use on their experiences and the effects of personal watercraft in particular. In addition the National Park Service could contact user groups of kayakers and canoeists to survey attitudes towards encountering personal watercraft during recreational excursions.

An additional survey of the desired experience of non-boat users and back-country users should be conducted to assess the perspectives of these users.

Response: Alternative B (the modified preferred alternative) currently provides for a three-year pilot study to further evaluate personal watercraft use areas. Potential restrictions of personal watercraft use in other locations of the recreation area would be evaluated at that time. The purpose of the pilot study and a description of how it would be implemented are provided in appendix C.

Public Comment:	*Commenter:*	*Affiliation:*
1245F	Sierra Club	Organization
1391K	Sierra Club, Utah Chapter	Organization

WATER QUALITY

Affected Environment

Issue 1: ***Add Information on MTBE (methyl tertiary butyl ether)***

A *Comment*: Why is MTBE incorporated into the water quality methodology? Why was a high percentage of MTBE in gasoline used in the calculations? MTBE is being replaced by components such as ethanol.

Response: The methodology described in the "Environmental Consequences" chapter and appendix G uses an MTBE concentration in gasoline of 15%. This represents a general maximum concentration of this additive. Inclusion of this value is consistent with the intent of the method to estimate "what could happen." In the water quality analysis, an ecotoxicological benchmark for MTBE of 51,000 µg/L was used. The calculations, as well as the water quality testing, found only a negligible impact from MTBE at Glen Canyon. Use of MTBE is being reduced, and several states have implemented or are planning bans or dramatic reductions on the sale of gasoline containing MTBE. For an overview of current MTBE use and phase-out, please see the August 2002 Department of Energy publication *Controversial Additive, MTBE, is Gradually Phased Out by States* (www.bioproducts-bioenergy.gov/news/displayrecentarticle.asp?idarticle=13).

Public Comment:	*Commenter:*	*Affiliation:*
1239C	Utah Shared Access Alliance	Organization

Issue 2: ***Clarify Utah State Water Quality Regulations Including Designated Uses for the Lake and Drinking Water Intake Locations***

A *Comment*: The *Final Environmental Impact Statement* should list all designated uses for the Lake.

Response: Designated uses for Lake Powell (in Arizona and Utah) are listed in the "Water Quality" section of the "Affected Environment" chapter.

Public Comment:	*Commenter:*	*Affiliation:*
1393K	Environmental Protection Agency	Public Agency

B *Comment*: Presence and location of drinking water intakes not addressed in the "Affected Environment" section.

Response: Information on the locations of the drinking water intakes near Hite Marina and at Glen Canyon Dam has been added to the "Affected Environment" chapter in the "Water Quality" section.

Public Comment:	*Commenter:*	*Affiliation:*
1393K	Environmental Protection Agency	Public Agency

C *Comment*: Utah's anti-degradation policy is undergoing review, verify accuracy before the *Final Environmental Impact Statement* is complete.

Response: Utah's water quality antidegradation policy is discussed in the "Water Quality" section of the "Affected Environment" chapter. The Water Quality Division of Utah's Department of Environmental Quality was contacted regarding the status of the current antidegradation policy. As of February 5, 2003, the rule was still under review. The existing regulation will be used to guide management decisions until any changes are published by the Utah Department of Environmental Quality.

Public Comment:	*Commenter:*	*Affiliation:*
1137F	US Fish and Wildlife Service	Public Agency

Issue 3: *Data Presentation and Analysis Incomplete for PAH (polycyclic aromatic hydrocarbons) and Other Fuel Components*

A *Comment*: Regarding properties of benzo(a)pyrene: "Oysters and bluegills are susceptible to buildup, but mudsuckers and sculpins show no tendency toward accumulation." This statement should have a reference, because it implies the results of a study.

Response: The reference regarding benzo(a)pyrene as cited in the *Final Environmental Impact Statement is EPA 2002. Technical Factsheet on: Polycyclic Aromatic Hydrocarbons (PAH).* This reference is available on the Internet at http://www.epa.gov/OGWDW/dwh/t-soc/pahs.html.

Public Comment:	*Commenter:*	*Affiliation:*
1137E	US Fish and Wildlife Service	Public Agency

B *Comment*: The discussion does not contain enough information to evaluate whether the design or results of the study are applicable to Lake Powell and its biota. Are striped bass more similar to bluegills or sculpins? Are catfish more similar to oysters or mudsuckers? Is benzo(a)pyrene more or less likely to build up in the Lake Powell ecosystem?

Response: The *Final Environmental Impact Statement* acknowledge that little is known about the specific behaviors and environmental effects of many PAH, including benzo(a)pyrene. Toxicity data for the species inhabiting Lake Powell were not available for the gasoline components analyzed using the water quality methodology. Freshwater benchmarks, obtained from peer-reviewed literature, were used for calculation of both ecological and human health threshold volumes. See appendix G for details on the approach for evaluating surface water quality impacts.

Public Comment:	*Commenter:*	*Affiliation:*
1137 E	US Fish and Wildlife Service	Public Agency

Issue 4: *Data Collection (Water Quality Sampling) and Presentation*

A *Comment*: Presenting average values for water quality testing samples, infers complete mixing of lake waters.

Response: Inclusion of average values was not intended to infer that lake waters are mixed, but rather to show the reader a mean value for relative comparison to measured maximum and minimum values. The "average values" have been removed from table 8.

Public Comment:	*Commenter:*	*Affiliation:*
905D, 905E		Individual

B *Comment*: The need to sample Wahweap Marina is called to attention based on the results at Bullfrog Marina sample where benzene concentrations were elevated.

Response: Under the modified preferred alternative (alternative B), the National Park Service would implement a water quality monitoring program at Lake Powell. This program will be guided by the Technical Advisory Committee, and is detailed in the *Final Environmental Impact Statement* description of alternative B (the modified preferred alternative) in the "Alternatives" chapter. Locations selected for ongoing testing will be chosen to maximize use of data in making appropriate management decisions.

Public Comment:	*Commenter:*	*Affiliation:*
905E		Individual

C *Comment*: On page 83, the National Park Service appears to make the assumption that the national recreation area's water quality is good by the apparent visual clarity of the lake. However, despite the fact that the National Park Service stated in appendix D that it doesn't have site-specific transparency data, water clarity is not a good indication of water quality.

Response: The text referred to by the commenter discusses water quality indicators near marinas and fueling stations. Away from high-use areas "waters are clear and appear clean to the casual observer." This statement simply provides a comparison for the reader regarding observable water quality parameters.

Public Comment:	*Commenter:*	*Affiliation:*
1002AC	Bluewater Network	Organization

Issue 5: *Insufficient Detail of Monitoring Plan and Marina Best Management Practices Information Pertaining to Persistent Hydrocarbon Constituents*

A *Comment*: Monitoring should also be done in drinking water intakes to assure that drinking water standards are met for Arizona and Utah.

Response: Water quality monitoring at the Hite drinking water intake would take place under all alternatives addressed in the *Final Environmental Impact Statement*. The water quality monitoring program would be directed by the Technical Advisory Committee, formed in 1996 to protect Lake Powell's water quality. The plan would ensure that water quality complies with state regulations and criteria and is consistent with requirements of the *Clean Water Act*.

The drinking water intake at Glen Canyon Dam, which serves the town of Page, AZ, is under the jurisdiction of the Bureau of Reclamation. The National Park Service has no authority to access this site to obtain water quality samples.

Potable water obtained from Lake Powell is tested after treatment at both the Hite and Page water treatment plants. The localities are responsible for the final quality of the drinking water, in addition to the state requirements for the quality of the drinking water source.

The "Water Quality" section in the "Affected Environment" chapter has been revised to include additional information regarding the drinking water intakes at Hite and Page.

Public Comment:	*Commenter:*	*Affiliation:*
1393K	Environmental Protection Agency	Public Agency

Issue 6: *Establish Whether Personal Watercraft Use Is Violating or Has the Potential to Violate State-Adopted Water Quality Standards, Including Impairment of Utah's Drinking Water Source Criteria*

A *Comment*: Page 83 includes a discussion of marina activities and notes evidence of a "rainbow sheen" at these sites. Utah Water Quality Standards (R317-2, Utah Administrative Code) include a narrative standard which establishes that "it shall be unlawful … to discharge or otherwise place waste or other substance in such a way as will be or may become offensive such as unnatural deposits, floating debris, oil, scum, or other nuisances such as color, odor or taste."

Response: The Utah Department of Environmental Protection, Water Quality Division, was contacted for interpretation of Water Quality Standard R317-2. The term "oil scum" is not intended to equate to the "rainbow sheen" commonly seen on water surfaces at fueling stations and marinas. These sheens are generally localized and transient. The sheen itself was not tested during water quality sampling for this assessment. Suggestions regarding sampling locations and techniques would be incorporated into the water quality monitoring program proposed under alternative B (the modified preferred alternative) in the *Final Environmental Impact Statement*. Recognizing that the presence of the sheen does indicate degraded water quality, the text in the *Final Environmental Impact Statement* has been changed to acknowledge temporary, localized degradation of water quality. Because the sheen results from combined marina and fueling activities, it was not possible to determine the specific personal watercraft-related contribution to this transient water quality issue.

The modified preferred alternative (alternative B) in the *Final Environmental Impact Statement* includes mitigation measures to further protect park waters. Under the modified preferred alternative, (alternative B) personal watercraft engines would be 100% compliant with EPA 2006 emission standards after 2012, further reducing petroleum-related pollution. Based on the analysis presented, the National Park Service finds that the modified preferred alternative (alternative B) (including the provision for continued personal watercraft use), if implemented, would not result in an impairment of park water quality.

Public Comment:	*Commenter:*	*Affiliation:*
1393F	Environmental Protection Agency	Public Agency

B *Comment*: Address whether Arizona anti-degradation regulations or water quality standards would be violated. If the visible sheen, or numeric concentrations of individual chemicals are in violation of standards, the water quality effects should be designated "major" rather than "negligible to minor." According to the *Draft Environmental Impact Statement*, a "major" impact is present where "chemical, physical or biological water quality standards or criteria would be locally slightly and singularly exceeded on a short-term and temporary basis.

Response: Lake Powell is an Arizona Tier II water body, and existing water quality "shall be maintained and protected. Water quality shall not be lowered to a level that does not comply with applicable water quality standards" (Arizona Administrative Code R18-11-107; see the "Water Quality" section, "Affected Environment" chapter). The NPS water quality sampling preformed at Lake Powell did not show that any Arizona water quality criteria were exceeded. As shown in table 9 in the "Affected Environment" chapter, Arizona standards are not as stringent as those for Utah, with the exception of naphthalene. The 3.43 µg/L benzene concentration found at Bullfrog Marina is below the Arizona criteria of 5 µg/L for drinking water sources. No impairment of Arizona designated uses for the waters of Lake Powell would be anticipated under any of the alternatives analyzed in this assessment. The conclusions contained in the "Water Quality" section of the *Final Environmental Impact Statement* text have been changed to reflect this finding.

The modified preferred alternative (alternative B) in the *Final Environmental Impact Statement* includes mitigation measures to further protect water quality in the recreation area. If implemented, the modified preferred alternative would provide an important step toward substantially reducing petroleum-related pollution by restricting the use of carbureted two-stroke engines in 2012.

Public Comment:	*Commenter:*	*Affiliation:*
1393F	Environmental Protection Agency	Public Agency

Issue 7: ***Need to Discuss Impacts on Water Quality Below the Dam***

A *Comment*: Pollutants discharged into Lake Powell can have detrimental impacts upon water quality, endangered species, public health, and wildlife downstream. Despite the fact that oil dumped in Lake Powell will impact resources and wildlife downstream from the national recreation area, the National Park Service makes no mention of it in the *Draft Environmental Impact Statement*.

Response: The National Park Service established the project area for this analysis to coincide with the areas of personal watercraft use at Glen Canyon National Recreation Area. Analysis of downstream impacts is outside the scope and mandate of this assessment. However, uses of Lake Powell could affect the quality of water downstream. The water quality analysis revealed that negligible to minor adverse effects occur due to personal watercraft use on Glen Canyon National Recreation Area. Measured water quality showed that no established water quality criteria were exceeded, with the exception of benzene. As discussed in the "Water Resources" section in the "Environmental Consequences" chapter, only half of the PAH (polycyclic aromatic hydrocarbons) and other gasoline components are emitted from personal watercraft, which is the sole subject of this assessment. Given the volatile nature and brief half-life of benzene (five hours) and the method of water release through Glen Canyon Dam (from the bottom), it is unlikely that fuel components found in lake waters contributed by personal watercraft use on the lake would have detectable effects below the dam. In addition, neither the states of Utah nor Arizona have water quality criteria for PAH compounds relative to irrigation water (see table 9). Until such standards are established, there would be no enforceable regulation applicable to these constituents, and there would be no effect on the designated use for irrigation or the distribution of waters for agricultural purposes.

The modified preferred alternative (alternative B) in the *Final Environmental Impact Statement* includes mitigation measures to further protect water quality in the recreation area. If implemented, the modified preferred alternative (alternative B) would provide an important step toward substantially reducing petroleum-related pollution by restricting the use of carbureted two-stroke personal watercraft engines in 2012. Based on the analysis presented, the National Park Service finds that the modified preferred alternative (alternative B) (including the provision for continued personal watercraft use) would not result in an impairment of park water quality.

Public Comment:	*Commenter:*	*Affiliation:*
1002AC 905L	Bluewater Network	Individual

Cumulative Effects

Issue 1: *Cumulative Effects of Loading Were Ignored*

A *Comment*: Cumulative effects of the loading were ignored. The estimated emission into the lake assumed that on a daily basis, 100% of hydrocarbon emissions volatilized daily. The emissions from personal watercraft contain oil, and oil does not volatilize completely.

Response: Although most polycyclic aromatic hydrocarbon (PAH) components there is the possibility for some of these pollutants to accumulate in the water column. The text has been changed and is included in the *Final Environmental Impact Statement* to provide more information on volatility and on the evaporation and half-life rates applicable to the waters of Lake Powell.

Public Comment:	*Commenter:*	*Affiliation:*
905F		Individual

Impacts on Water Quality from Personal Watercraft Use

Issue 1: ***New References to Include in Water Quality Analysis***

A *Comment*: In the report Water Quality Concerns related to Personal Watercraft Usage, the National Park Service admits that gas and combustion products are routinely found in lakes and reservoirs with personal watercraft use, sometimes at levels which threaten both human and ecological health. This is particularly troubling because PAH — even at minute levels of parts per trillion — are toxic to aquatic plants and fish. The research also found that concentrations of many of these pollutants remained substantially elevated in the test tank one full day after testing.

Response: Recognizing that some pollutant concentrations in the water column from two-stroke carbureted engines are greater than those of comparable four-stroke engines, the evaluation of surface water quality impacts in the "Water Resource" section of the "Environmental Consequences" chapter addresses the combined effects of all recreational boats and personal watercraft. Under the modified preferred alternative (alternative B), a chemical pollutant monitoring program would be instituted (funding is currently being sought) in order to protect the high water quality standards for fisheries protection, human health, and recreation. If monitoring determines that water quality standards are being violated, management actions would be evaluated and implemented to reduce the effects of polluting activities.

Furthermore, if implemented, the modified preferred alternative (alternative B) in the *Final Environmental Impact Statement* would provide an important step toward substantially reducing petroleum-related pollution by restricting the use of carbureted two-stroke personal watercraft engines in 2012. Based on the analysis presented, the National Park Service finds that the modified preferred alternative (including the provision for continued personal watercraft use) would not result in an impairment of park water quality.

Public Comment:	*Commenter:*	*Affiliation:*
1002E, 1002K	Bluewater Network	Organization

Issue 2: Water Quality Analysis Is Inadequate Because it Omitted Relevant Research, Used Extreme Assumptions, or Disregarded Significant Impacts Still Present with New Technology

A *Comment*: You didn't mention anything about the study that was completed at Lake Powell by the closing of Bowns and Knowles Canyons for the past two years. The samples of water and soil taken show No discernible difference than the rest of the lake, and certainly no difference if boats had been present or not.

Response: The U.S. Geological Survey (USGS) recently completed two years of data collection in three side canyons at Glen Canyon National Recreation Area. Data were gathered during high boating-use periods, low-use periods, and in a control canyon with no boat traffic. Water and sediment were tested for a large suite of contaminants, including nutrients, components of wastewater, trace minerals, volatile organic compounds, and components of gasoline and grease. The data are currently undergoing analysis at the U.S. Geological Survey, and a contaminant database is being developed. The results of the study will be published when the analysis is complete. The findings of the report will be valuable in forming future management decisions regarding wastewater handling, motorized vessel impacts on water and sediment quality, and upstream contributions of metals and minerals.

Public Comment:	*Commenter:*	*Affiliation:*
1209B		Individual

Issue 3: *Insufficient Detail of Monitoring Plan and Marina Best Management Practices Information Pertaining to Persistent Hydrocarbon Constituents*

A *Comment*: The *Draft Environmental Impact Statement* lacks a description of a detailed long-term monitoring plan to ensure evaluation of impacts on the aquatic system.

Response: Each alternative addressed in the *Final Environmental Impact Statement* includes implementation of a water quality monitoring plan. This program would be directed by the Technical Advisory Committee, formed in 1996 to protect Lake Powell's water quality. The plan would ensure that water quality complies with state regulations and criteria and is consistent with requirements of the *Clean Water Act*. The monitoring program would incorporate the findings of two recently completed studies on the chemical content of lake waters and sediment in the Colorado River inflow area and three side canyons. The dynamics of sediment re-suspension in the Colorado River inflow is currently underway. Funding is also being sought for additional studies in the San Juan and Escalante River inflow areas. The monitoring plan would include hydrocarbon content of sediments and polycyclic aromatic hydrocarbon (PAH) content of lake waters. Benthic population studies may be included, if deemed necessary by the Technical Advisory Committee. Findings of these various studies will be used to guide management decisions for polluting activities that take place on Lake Powell.

Public Comment:	*Commenter:*	*Affiliation:*
1393E	Environmental Protection Agency	Public Agency

B *Comment*: This environmental impact statement should assess whether there are best management practices available for personal watercraft fueling that would reduce or eliminate fuel spills and minimize the potential for violations of applicable State water quality standards.

Response: The NPS Hazardous Waste Management and Pollution Prevention Team has developed a *Spill Prevention Control and Countermeasures Plan* (NPS 1998d) that provides recommendations and requirements to prevent environmental damage resulting from spills of oil. These plans are required by the EPA as stated in 40 CFR, Part 112. The National Park Service and all marina operators must comply with these requirements to limit the environmental effects of fueling on the lake. In accordance with this regulation, ARAMARK, the park concessioner, has developed a *Spill Prevention Control and Countermeasure Plan* for all fueling sites within the recreation area (ARAMARK, n.d.). In addition, educational materials such as placards are displayed at marinas to inform boat operators about proper fueling of vessels and containers, to reduce the potential for fuels entering the water.

Public Comment:	*Commenter:*	*Affiliation:*
1393F	Environmental Protection Agency	Public Agency

Issue 4: Establish Whether Personal Watercraft Use Is Violating or Has the Potential to Violate State Adopted Water Quality Standards, Including Impairment of Utah's Drinking Water Source Criteria

A *Comment*: The water quality section of the *Final Environmental Impact Statement* should clearly state whether activities regulated by the National Park Service are violating, or have the potential to violate, State-adopted, EPA-approved water quality standards under the Federal *Clean Water Act*.

Response: The Utah Department of Environmental Quality, Water Quality Division, was contacted for clarification of the state's assessment of Lake Powell water quality. The division reported that the state has no concerns with regard to the 1.7 µg/L and 3.43 µg/L benzene concentration obtained near Bullfrog Marina during water quality testing. The drinking water intake near Hite Marina is approximately 0.25 mile upstream of the marina, and it is unlikely that gasoline components from the marina would migrate in this direction. Hite is also a smaller marina than Bullfrog, with much less boat traffic and fueling activities. In addition, the intake floats at approximately 12 feet below the water surface. Benzene is lighter than water, highly volatile, and has a half-life of approximately five hours.

The *Final Environmental Impact Statement* proposes a water quality monitoring program in each of the alternatives considered. This plan is outlined in the "Alternatives" chapter and is discussed in the "Water Quality" responses to comments at comment 1393 E, above.

The "Water Quality" section in the "Affected Environment" chapter has been changed in the *Final Environmental Impact Statement* to include new information on the drinking water intakes, and jurisdiction over the two sites.

Public Comment:	*Commenter:*	*Affiliation:*
1393A	Environmental Protection Agency	Public Agency

Issue 5: *Cumulative Effects of Loading Were Ignored*

A Comment: The *Draft Environmental Impact Statement* failed to list under alternative C benefits which apply to all three alternatives, namely the beneficial impacts on air and water quality due to the increasing proportion of low emission engines which will be realized in the Lake Powell fleet over time.

Response: The cumulative effects analysis under alternative C discusses reduction in pollutant loadings to water by the changeover of all carbureted two-stroke technology, not just cessation of personal watercraft use. Pollution contribution from other two-stroke vessels is shown to decrease after 2005, with total contribution of four-stroke engines increasing relative to total pollutant inputs (see table 39 and the text that follows it for more information).

Public Comment:	*Commenter:*	*Affiliation:*
1180G		Individual

Regulations, Methodologies, and Assumptions

Issue 1: *PAH Data Presentation and Analysis Incomplete*

A *Comment*: The numeric criteria for benzo[a]pyrene however, is less than the reporting limit that the Woods Hole Laboratory could report, (appendix D.1).

Response: The National Park Service acknowledges this inconsistency between the human health benchmark for benzo(a)pyrene and the reporting limit. The toxicological benchmark that is below the reporting limit (10 parts per trillion) is for combined consumption of fish flesh and ingestion of water from the source. This benchmark is established at 4.4 parts per trillion. Although the detection threshold was above the toxicity benchmark for human health (when both organisms and water are consumed), the water quality method can be used to determine if this criteria would be violated. Table 36 and the text that follows it, detail the water volume needed to meet the human health criteria for benzo(a)pyrene. Current pollutant loadings from personal watercraft alone would require 14,883 acre-feet to reach the toxicity threshold. For other two-stroke engines, the value is 7,432 acre-feet. This represents a small fraction of the volume available to dilute the pollutant, and no adverse effects to human health would be expected from current benzo(a)pyrene loading to Lake Powell. No text changes were necessary to address this comment.

Public Comment:	*Commenter:*	*Affiliation:*
905C		Individual

Issue 2: *Data Collection (Water Quality Sampling) and Presentation*

A *Comment*: The *Draft Environmental Impact Statement* assessment of water quality is based on water column samples taken at 0.5 and 3 meter depths. Given that most constituents from watercraft exhaust or spills will float on the water's surface, it would seem logical to collect water samples at the water's surface rather than 0.5 meters below to determine compliance with standards.

Response: In a recent study by the U.S. Geological Survey (Albers 2002), PAH compounds were found to be 18 times higher in the surface microlayer than in the water column below. To address the transient water quality issues associated with this concentration of low molecular weight hydrocarbons, the National Park Service would implement lake-wide comprehensive water quality testing under alternative B (the modified preferred alternative) (see the "Alternatives" chapter).

Public Comment:	*Commenter:*	*Affiliation:*
1393H	Environmental Protection Agency	Public Agency

Issue 3: *Water Quality Analysis Is Inadequate Because it Omitted Relevant Research, Used Extreme Assumptions, or Disregarded Significant Impacts Still Present with New Technology*

A *Comment*: The National Academy of Sciences (NAS) recent report Oil in the Sea III: Inputs, Fates and Effects addresses impacts due to oil and gas mixture used in personal watercraft. Pollutants such as PAH can remain suspended in the water column, or be deposited in sediment for years after initial deposition. Explain how it can be concluded that the oil and gas mixture dumped by personal watercraft is not damaging park resources. The National Park Service also seems to make mistakes when estimating the daily fuel load for Lake Powell. On page 168 the calculations contain the assumption that only a small residual concentration of the daily fuel load will carry over to the following day. The National Park Service is underestimating the amount of gas and oil personal watercraft dump into the lake that is carried over into the next day.

Response: The protection of water quality within Glen Canyon National Recreation Area has been addressed in this *Final Environmental Impact Statement*, which contains evaluations of surface water quality impacts. An estimated minimum threshold volume of water in Lake Powell, below which concentrations of fuel constituents from personal watercraft or other outboard engines would be potentially toxic to aquatic organisms or humans was determined. Using the estimated threshold volumes, characteristics of the contaminants identified, and physical attributes of the water body, it is possible to identify unacceptable risks to human health or the environment. There are a limited number of EPA criteria for the protection of human health (via ingestion of water and aquatic organisms or ingestion of aquatic organisms only). Chronic ecotoxicological and human health benchmarks for contaminants were acquired from various sources. The evaluation presents the most restrictive thresholds, based on both federal and state water quality standards, for the pollutants. Table 10 shows the benchmarks used in the evaluation for each pollutant.

Furthermore, if implemented the modified preferred alternative (alternative B) in the *Final Environmental Impact Statement* would provide an important step toward substantially reducing petroleum-related pollution by restricting the use of carbureted two-stroke personal watercraft engines at the end of 2012. Based on the analysis presented, the National Park Service finds that the modified preferred alternative (alternative B) (including the provision for continued personal watercraft use) would not result in an impairment of park water quality.

Public Comment:	*Commenter:*	*Affiliation:*
1002AC	Bluewater Network	Organization

B *Comment*: The water quality assessment uses assumptions that result in overestimation of potential personal watercraft hydrocarbon emissions to the water in Lake Powell, amounting to the "most extreme adverse conditions." For example, benzo(a)pyrene concentrations in gasoline range from 0.19 to 2.8 mg/kg, and the highest value was used. Similarly, MTBE concentrations in gasoline were range from 0% to 15%, but only the highest figure was used.

Response: In an effort to determine "what could happen," a conservative methodology was constructed using the highest concentration of known pollutants commonly found in gasoline. The values referenced by the respondent were incorporated into the analysis to determine if the mixing layers of Lake Powell have adequate volume to mitigate the effects of carbureted two-stroke personal watercraft engines, as well as other watercraft. Using this conservative approach, it was determined that the water quality impacts generated by personal watercraft use would be negligible to minor, and that no water quality criteria for designated uses of the lake would be violated. The National Park Service is satisfied that incorporation of the given component concentration in gasoline has served this approach. Table 10 shows the benchmarks used in the evaluation for each pollutant.

In addition, if implemented, the modified preferred alternative (alternative B) in the *Final Environmental Impact Statement* would provide an important step toward substantially reducing petroleum-related pollution by restricting the use of carbureted two-stroke personal watercraft engines at the end of 2012. Based on the analysis presented, the National Park Service finds that the modified preferred alternative (alternative B) (including the provision for continued personal watercraft use) would not result in an impairment of park water quality.

Public Comment:	*Commenter:*	*Affiliation:*
1344J	Personal Watercraft Industry Association	Organization

C *Comment*: The assessment represents an outdated look at potential emissions from an overstated personal watercraft population of conventional two-stroke vessels, and underestimates the accelerating changeover to four-stroke and newer technology two-stroke models. Sales of these newer models have already overtaken conventional two-stroke personal watercraft. As shown in the Sierra Research analysis, the changeover personal watercraft engines that meet the requirements of the EPA 2006 and CARB 2008 emission standards is occurring much more rapidly than EPA and the National Park Service have estimated. The amounts of unburned fuel released at Lake Powell will decline rapidly, achieving a reduction from the 1998 baseline levels of more than 50% by 2006 and approximately 80% by 2012. See Sierra Report at 1. The *Draft Environmental Impact Statement*, in contrast, only estimated a 25% reduction in hydrocarbon emissions from personal watercraft in the Glen Canyon National Recreation Area by 2006, and only a 50% reduction by 2012. *Draft Environmental Impact Statement* at 169.

Response: In the water quality analysis, the assumption was made that clean technology engines (any engine not using carbureted two-stroke technology) would be 90% cleaner than the carbureted two-stroke engines. This is based on two assumptions made by the commenter. The first is based on confidential, proprietary personal watercraft sales and forecast data prepared by personal watercraft manufacturers. No supporting data was supplied with the comment. The commenter states that the data indicates that the conversion of personal watercraft models to cleaner engines is occurring more rapidly than anticipated in the 1996 EPA analysis of the effects of the conversion rule. While the National Park Service has no reason to doubt that personal watercraft conversions are proceeding at a greater rate than forecast by the Environmental Protection Agency, there is no survey or similar data available at this time indicating the engine conversion at Glen Canyon is proceeding at a faster or slower rate than the EPA forecast. Therefore, use of the EPA rates is considered appropriate. The second assumption by the commenter is that 75% of the personal watercraft at Glen Canyon would have engines that comply with the California Air Resource Board (CARB) conversion rule that requires marine engine manufacturers implement the EPA emission targets sooner than those outlined by the federal rule. The commenter assumes that 50% of personal watercraft users at Glen Canyon will be from California, and will have CARB-compliant watercraft. And that an additional 20% will have CARB-compliant vessels. The National Park Service concurs that many watercraft users at Glen Canyon have California registered personal watercraft, and they will meet CARB standards. However, there is no data relative to personal watercraft at Glen Canyon to confirm the 75% figure assumed by the commenter. The NPS emissions calculations are conservative only in the sense that they do not specifically account for watercraft that have already been or will be converted to meet CARB standards. Under the modified preferred alternative (alternative B), personal watercraft engines at the recreation area would be 100% compliant after 2012.

Public Comment:	*Commenter:*	*Affiliation:*
1344I, 1344 J	Personal Watercraft Industry Association	Organization

D *Comment*: The numbers used to predict loading on the lake for future years assume a zero growth condition. A zero growth assumption is not realistic for the boating industry or Glen Canyon National Recreation Area. Glen Canyon National Recreation Area has plans to continue to develop projects that support the boating industry.

Response: New estimates for changes in boat uses at Glen Canyon have been generated for the *Final Environmental Impact Statement* based on trends for NPS units with personal watercraft usage. The effects of three differing growth scenarios are now described in the analysis: (1) annual increase of 2% per year, (2) no change (flat rate), and (3) annual decrease in use of 2% per year. For a complete explanation of the change in use, see the "Visitor Use and Experience" section in the "Affected Environment" chapter.

Public Comment:	*Commenter:*	*Affiliation:*
905A	Personal Watercraft Industry Association	Individual

E *Comment*: The *Draft Environmental Impact Statement* claims that carbureted 2 cycle engines discharge "up to" 30% of their fuel/oil into the water (California Environmental Protection Agency, ARB, 1999). The analysis should note that the mean discharge is likely to be much less than the 30% figure.

Response: The National Park Service reviewed a variety of literature prior to development of the water quality methodology. Thirty percent was commonly cited as a personal watercraft discharge rate for unburned fuel. This value was deemed reasonable and incorporated into the calculations for contaminant loading for the environmental analysis (NPS, G. Rosenlieb, pers. comm. 2003).

Public Comment:	*Commenter:*	*Affiliation:*
1239B	Utah Shared Access Alliance	Organization
845B		Individual

F Comment: The water quality model should focus on the differential impacts on the side canyons from the uses anticipated under alternatives A and B. If data are available to measure this, the extent of personal watercraft use in the river channel arms should be compared to the lake main channel, and these data used to develop use rates and emissions loadings.

Response: The water quality analysis was developed using the best available data. Flow rates and volumes in the canyons are also unavailable. Because of the variability in the elevation of the reservoir surface and changing seasonal flow from tributaries, the flow rates and volumes of the canyons are not known. Under all alternatives, the National Park Service would implement a lake-wide water quality monitoring program to direct future management efforts regarding water quality of Lake Powell. If water quality in the side canyons is affected by recreational boat use, appropriate management decisions would be made to reduce or limit these differential effects. If implemented, the modified preferred alternative (alternative B) in the *Final Environmental Impact Statement* would provide an important step toward substantially reducing petroleum-related pollution by restricting the use of carbureted two-stroke personal watercraft engines at the end of 2012.

Public Comment:	*Commenter:*	*Affiliation:*
1137B	US Fish and Wildlife Service	Public Agency

Issue 4: *Reference Other Water Quality Standards*

A Comment: The model used to calculate allowable loadings (appendix F of the *Draft Environmental Impact Statement*) uses the most conservative water quality standards to calculate toxicity thresholds, with the exception of benzene. We recommend that the Utah water quality standard for Class 3B waters (warm water fisheries), 71 µg /L for benzene, be used in the model instead of the 130 µg/L ecotoxicological benchmark value (appendix F, table F.1). Because of the many assumptions of the model, there is a need to be conservative with each of these benchmarks.

Response: Calculations for water volume thresholds needed to mitigate benzene have been adjusted to the 71 µg/L warm water fishery standard for the state of Utah. The acre-feet required to meet this standard have, therefore, increased. The new results are shown in table 36. The threshold quantity of water for personal watercraft only benzene generation is 8,117 acre-feet, and for other two-stroke engines, the threshold is 4,054 acre-feet. Both quantities are well below the available mixing volume of Lake Powell. This change does not alter the finding of negligible to minor adverse effects on water quality.

Public Comment:	*Commenter:*	*Affiliation:*
1137B	US Fish and Wildlife Service	Public Agency

B Comment: Fish in tributary areas could be significantly impacted personal watercraft usage in these side channels, and it is important that every effort is made to correctly estimate potential effects.

__Response__: Under the modified preferred alternative (alternative B) in the *Final Environmental Impact Statement*, water quality monitoring would include, when appropriate, testing of fish for the presence of PAH. If chronic or acute toxicity is found in any tested species, regulation of boat use or other PAH loading sources would be pursued.

Public Comment:	*Commenter:*	*Affiliation:*
1137B	US Fish and Wildlife Service	Public Agency

Issue 5: *The PAH Data Analysis is Inadequate*

A __Comment__: More information is needed on the long -term impact of some pollutants. On page 16, the National Park Service states that it lacks studies on the long-term impacts of PAH on various biota.

__Response__: The protection of water quality within Glen Canyon National Recreation Area has been addressed in this *Final Environmental Impact Statement*, which contains evaluations of surface water quality impacts. Using calculated water threshold volumes, water quality testing results, and characteristics of the contaminants identified, it is possible to identify unacceptable risks to human health or the environment. There are a limited number of EPA criteria for the protection of human health. Chronic ecotoxicological and human health benchmarks for contaminants were acquired from various sources. The evaluation presents the most restrictive thresholds, based on both federal and state water quality standards, for the pollutants. Table 10 shows the benchmarks used in the evaluation for each pollutant.

Additionally, if implemented, the modified preferred alternative (alternative B) in the *Final Environmental Impact Statement* would provide an important step toward substantially reducing petroleum-related pollution by restricting the use of carbureted two-stroke personal watercraft engines t the end of 2012. Based on the analysis presented, the National Park Service finds that the modified preferred alternative (alternative B) (including the provision for continued personal watercraft use) would not result in an impairment of park water quality.

Public Comment:	*Commenter:*	*Affiliation:*
1002AC	Bluewater Network	Organization

B __Comment__: On page 355, the National Park Service states that phototoxicity is not incorporated because if the site-specific water transparency of the lake is not known. This despite the fact that research at Lake Tahoe shows that PAH toxicity increases dramatically when exposed to sunlight.

__Response__: Phototoxicity is an increase in toxic effects due to exposure to sunlight. The phototoxicity of PAH varies by compound, temperature of the water, available amount of ultraviolet light, and water column mixing. When these substances are exposed to sunlight, photodegradation (accelerated breakdown caused by sunlight) may occur in conjunction with biodegradation (NPS 1997). Therefore, the toxicity and degradation rates of each PAH compound is based on site-specific information. This level of detail is not currently known for the waters of Lake Powell, and presentation of such information would be speculative. For these reasons, potential increases in phototoxicity and/or photodegradation are not included in the analysis.

Public Comment:	*Commenter:*	*Affiliation:*
1002AC	Bluewater Network	Organization

C __Comment__: The *Draft Environmental Impact Statement* acknowledges that hydrocarbon compounds evaporate rapidly from water and are subject to chemical breakdown, but then states that attenuating factors such as evaporation and photodegradation are not included in the calculations. In addition, EPA has confirmed that studies show most unburned gasoline and gasoline additives emitted from two-stroke marine engines evaporate rapidly from water (The Effects of Marine Engine Exhaust Emissions on Water Quality, Summary of Findings of Various Research Studies, EPA 1994).

Response: In 1994, the Environmental Protection Agency released a public memorandum entitled "The Effects of Marine Engine Exhaust on Water Quality: Summary of Findings of Various Research Studies." This document summarized 11 research papers and presents volatilization rates and dilution ratios for observable effects such as taste, odor, and generation of oil film. At temperatures commonly found in Lake Powell during the summer boating season, the majority of gasoline and oil components would be volatilized within 1.2 hours (EPA 1994). Although a portion of the gas/oil mixture may accumulate in the water column, water quality testing at Lake Powell did not reveal detectable levels of most PAH components. Given that the contaminants were largely undetectable, specific cumulative analysis of the personal watercraft contribution is not possible at this time. The text has been changed in the *Final Environmental Impact Statement* to include information on volatility consistent with the above-referenced EPA memorandum.

Public Comment:	*Commenter:*	*Affiliation:*
13441	Personal Watercraft Industry Association	Organization

WILDLIFE AND WILDLIFE HABITAT

Affected Environment

Issue 1: ***Personal Watercraft Use and Human Activities Associated with Their Use May Not Be Any More Disturbing to Wildlife Species Than Any Other Type of Motorized or Nonmotorized Watercraft***

A *Comment*: The National Park Service has recognized that personal watercraft cannot be singled out as a separate or distinct impact on wildlife. Since 1995, Dr. James Rodgers of the Florida Fish and Wildlife Conservation Commission has been conducting scientific studies of the effects of human disturbances on wildlife. Because this research is broad, and not just personal watercraft specific, Dr. Rodgers' findings are particularly relevant to the NPS personal watercraft rulemakings in general, and specifically the proposed rule. His studies have shown that personal watercraft are no more likely to disturb wildlife than any other form of human interaction. Personal watercraft posed less of a disturbance than other vessel types. Dr. Rodgers' research clearly shows that there is no reason to differentiate personal watercraft from motorized boating based on claims on wildlife disturbance. Moreover, some studies indicate that nonmotorized intrusions -- such as canoeists and kayakers -- can be more stressful and damaging than motorized activity, which provides greater advance warning to wildlife."

Response: The research findings of Dr. Rodgers, along with many other technical investigations of interactions between different wildlife species and human-induced noises, were reviewed and evaluated for applicability to personal watercraft use at the Glen Canyon National Recreation Area. As the commenter notes, the technical literature reports a range of wildlife reactions to personal watercraft and other watercraft uses.

Public Comment:	*Commenter:*	*Affiliation:*
13440	Personal Watercraft Industry Association	Organization

Impacts from Other Vessels

Issue 1: Other Types of Motorized Watercraft Are Responsible for as Much or More Wildlife Habitat Damage as Personal Watercraft

A *Comment*: "There are many two-stroke engines on other types of boats. that pollute as much as the personal watercraft, are far louder than personal watercraft and cause far more damage to the wildlife habitat with near-shore vegetation and shore erosion."

Response: The assessment of potential effects to wildlife populations and habitats considered two perspectives. First, an estimate was made of the effects of personal watercraft to wildlife populations and habitats for the specific conditions that prevail at the national recreation area under each alternative condition. Then, the effects of personal watercraft use in conjunction with all other types of two-stroke and other motorized watercraft were evaluated as part of the cumulative effects analysis. The incremental and collective effects of these other watercraft were accounted for in the analysis.

The plan was not designed to determine if personal watercraft caused more environmental damage to park resources than other boats, but rather, to determine if personal watercraft use was consistent with Glen Canyon National Recreation Area's enabling legislation and management goals and objectives. The overall objective is to meet the terms of the settlement agreement between Bluewater Network and the National Park Service (see "Introduction" in the "Purpose of and Need for Action" chapter). An analysis was done on the management of personal watercraft in order to meet the terms of the settlement agreement. With completion of this *Final Environmental Impact Statement*, the National Park Service may either take action to adopt special regulations to manage personal watercraft use at Glen Canyon, or may choose to discontinue personal watercraft use.

Public Comment:	*Commenter:*	*Affiliation:*
211A		Individual

Impacts of Personal Watercraft Use

Issue 1: *Tour Boat Uses Cause Greater Effects to Wildlife and Wildlife Habitat Than Personal Watercraft*

A *Comment*: Personal watercraft do not present a danger to wildlife or its habitat or to the shoreline. While parts of the shoreline are degraded, this is primarily due to the Tour boats and outboard motors.

Response: The impact analysis of personal watercraft effects to wildlife and wildlife habitat considered the effects of other types of watercraft that use Lake Powell and the national recreation area. In particular, a primary focus of the cumulative effects analysis was to account for other types of motorized watercraft that could cause effects similar to and more or less severe in magnitude to personal watercraft. The individual alternatives analysis also accounted for wildlife and wildlife habitat effects that are related to or caused by the substantial environmental changes that result from typical operations of the reservoir for other beneficial uses.

Public Comment:	*Commenter:*	*Affiliation:*
576A		Individual

Issue 2: *The Draft Environmental Impact Statement Should Acknowledge Research Findings That Detected Levels of Some PAH Compounds in Lake Powell Fish Tissue Samples*

A *Comment*: Polynuclear aromatic hydrocarbons (PAH) are primary contaminants of concern for aquatic ecosystems exposed to hydrocarbon emissions. Because of the level of motor vehicle use on Lake Powell, and the possible presence of other PAH sources on the San Juan River arm, the National Park Service and FWS cooperated on a preliminary study of PAH uptake in fish in the main channel, marinas, and San Juan arm. This study, conducted between 1991 and 1994, evaluated PAH concentrations detected in bile from fish collected at these three locations on the lake. Initial sample results had been available to the National Park Service. The reasons for including the data are twofold. First, PAH metabolites in bile are a reliable and sensitive indicator of recent exposure to these constituents in the foodchain. Assuming that the origin of the PAH can be traced to the use of combustion engines in the environment in question, PAH exposure in fish can then be linked to the use of these engines. Secondly, this data can serve as a baseline for future monitoring that should be conducted as part of the resource management plan adopted for Lake Powell following the choice of alternatives under the environmental impact statement.

With proper study design, we believe that monitoring for this endpoint can provide a cost-effective, direct way of evaluating exposure and potential adverse impacts on aquatic wildlife species and other trust resources within the Lake Powell ecosystem

Response: The discussion of potential effects of PAH compounds has been changed in the *Final Environmental Impact Statement* to acknowledge the findings of the referenced U.S. Fish and Wildlife Service monitoring investigation (see the "Wildlife and Wildlife Habitat" section of the "Environmental Consequences" chapter). The study was conducted between 1991 and 1994 in which fish bile was tested for concentrations of polycyclic aromatic hydrocarbons (PAH). Polycyclic hydrocarbons can be taken up from the environment through ingestion and/or absorption and are linked to adverse health effects such as liver and skin lesions and tumors. The fish used in the study were collected from the main channel, marinas, and the San Juan River arm of the recreation area. Polycyclic hydrocarbons were detected in the bile of fish at concentrations consistent with values indicating exposure to sediments that are considered to be low to moderately contaminated. However, no indication of adverse health effects, lesions or tumors, were found in any of the fish collected (U.S. Fish and Wildlife Service 2002).

Public Comment:	*Commenter:*	*Affiliation:*
1137C	US Fish and Wildlife Service	Public Agency

Issue 3: *Predicted Impacts of Personal Watercraft Use to Wildlife And Wildlife Habitats Described in the Draft Environmental Impact Statement Does Not Justify Restricting Personal Watercraft Use*

A *Comment*: "Concerning wildlife and wildlife habitat, the *Draft Environmental Impact Statement* states on page 17: "Few studies have examined personal watercraft effects on wildlife". And: "However, the extent, duration, and magnitude of biological impacts because of personal watercraft operations versus other motorboats remain unknown". On page 120: "Under current condition there are no documented reports of known conflicts of federally endangered fish or other species with watercraft or personal watercraft users." On page 232: "Conclusion. alternative A would not adversely affect any ecological, biological, or physical processes associated with endangered fish critical habitats." So, restricting personal watercraft use relating to the issue of wildlife and wildlife habitat is unjustified.

Response: Potential personal watercraft effects to wildlife and wildlife habitat conditions that prevail at the recreation area were estimated using the best available information and technical research findings. The estimated effects to wildlife and wildlife habitat were considered together with the impact predictions for other natural, visitor use, socioeconomic, and cultural resources in arriving at a decision on how to best manage future personal watercraft use in the recreation area.

Public Comment:	*Commenter:*	*Affiliation:*
1184C		Individual

Issue 4: *Boats Powered by Outboard Motors Created Greater Effects on Wildlife Than Personal Watercraft in Comparison Tests*

A *Comment*: The Florida FWCC have conducted extensive studies on wildlife impacts and found that the outboard motors on boats used by the testers created more wildlife reactions at farther distances than the personal watercraft in the tests.

Response: The assessment of potential effects of personal watercraft to birds and other types of wildlife for the different use alternatives considered the circumstances and findings of the referenced Florida Fish and Wildlife Conservation Commission investigations. Some of the findings from these studies were used to the extent they were considered applicable to Glen Canyon National Recreation Area wildlife and other environmental conditions. See the "Wildlife and Wildlife Habitat" section in the "Environmental Consequences" chapter of the *Final Environmental Impact Statement*.

Public Comment:	*Commenter:*	*Affiliation:*
151C		Individual

Issue 5: *Wildlife Abundance Would Increase With Elimination of Personal Watercraft Noise and Human Disturbance*

A *Comment*: The environment will benefit from the ban of personal watercraft by a decrease in the amount of toxic compounds released into the aquatic ecosystem and a reduction in noise pollution.

Response: Determining the effect of noise on wildlife is a complicated and uncertain process because responses vary between species and between individuals of a single population. These variable responses are due to the characteristics of the noise and its duration, the life history characteristics of the species, habitat type, season, activity at the time of exposure, sex and age of the individual, level of previous exposure, and whether other physical stresses such as drought are occurring around the time of exposure (Busnel 1978).

These complications apply equally to situations that may be presumed to either benefit or adversely affect wildlife species of interest. Several studies have discussed the very difficult (if not impossible) task of separating noise effects from other environmental factors influencing the behavior and physiology of an animal.

The National Park Service is well aware of the body of scientific literature and studies that have attempted to define noise effects on wildlife, and it has strived to provide a balanced description of the factors and conditions that may affect wildlife reactions and welfare under different noise conditions. See responses to comments in the "Soundscape" section of this volume 2 for further information of the impacts of personal watercraft-generated noise.

Public Comment:	*Commenter:*	*Affiliation:*
668D		Individual

Issue 6: ***Characterization of Impact Duration Should be Changed***

A Comment: The commenter disagrees with the conclusion stated in the summary table of impacts that beneficial effects to wildlife would decrease with time as other motorized watercraft replaced personal watercraft.

Response: The *Final Environmental Impact Statement* states that following a ban on personal watercraft use, conditions would return to pre-ban levels by 2012 due to either growth in natural visitation or increases in visitation by individuals who would now choose to visit the recreation area but avoided the recreation area because of personal watercraft disturbance. This would result in the referenced impact conclusion.

Public Comment:	*Commenter:*	*Affiliation:*
1180L		Individual

Issue 7: ***The Draft Environmental Impact Statement Does Not Adequately Disclose the Potential Effects of Personal Watercraft Use on Selected Bird and Mammal Species***

A Comment: The *Draft Environmental Impact Statement* assessment of personal watercraft impacts on wildlife is incomplete and flawed. The *Draft Environmental Impact Statement* does not adequately assess the adverse effects personal watercraft use has, or may have, on Peregrine Falcons, Great Horned Owls, Bald Eagles, Golden Eagles and Western Yellow-Billed Cuckoos. Studies have shown that personal watercraft use adversely impacts a wide variety of bird species including osprey, the Common Loon, Common Tern, Brown Pelican and Trumpeter Swan.

The *Draft Environmental Impact Statement* also does not adequately assess the adverse effects of personal watercraft use has, or may have, on Desert Bighorn Sheep or on river otters. National Park Service should not automatically assume that personal watercraft impacts are negligible or acceptable to nesting birds and breeding mammals. Implementing a 1,000-foot shoreline buffer from high-speed personal watercraft operation would provide much better protection to wildlife from personal watercraft impacts.

Response: The *Final Environmental Impact Statement* (see "Wildlife and Wildlife Habitat" section in the "Environmental Consequences" chapter) acknowledge that personal watercraft use can affect individual animals. The significance of such effects is certainly open to many differences of opinion. There are technical literature research reports that have identified adverse effects from personal watercraft operations to individuals of some species under certain circumstances. Other studies point to the lack of adverse effects under other circumstances.

For the *Draft* and *Final Environmental Impact Statements*, the National Park Service reviewed these technical investigations and applied the findings within the physical, recreational, and ecological conditions that prevail at Glen Canyon National Recreation Area. Each of the species identified by the commenter was considered for potential effects and interpretations regarding the significance of these effects were made.

Special impact assessment attention was focused on aspects of species life history periods (such as raptor nesting times) and habitat use or special requirements areas that are considered by wildlife professionals as being particularly vulnerable to personal watercraft uses. The initial results of these assessments were then reviewed by park natural resource specialists with knowledge of specific park conditions to confirm the reasonableness of the assessment findings.

For many of the cited species, reasons for concern were not appropriate for the Lake Powell environment because the types of species reported by the literature as being affected by personal watercraft use or the habitat conditions reported as being adversely affected (such as a shoreline nesting colony of plovers or terns) did not exist in the national recreation area. Conclusions regarding wildlife impacts were based on this process and are believed to be accurate and complete.

In addition, the modified preferred alternative (alternative B) provides for further protection of wildlife in the recreation area. Phasing in of new personal watercraft technology under the modified preferred alternative (alternative B) would reduce impacts on aquatic and shoreline species by reducing the discharge of fuel components into the water. A lake management plan will provide the tools necessary to analyze activities that take place on the lake and determine if unacceptable impacts are occurring using information gained from a three-year pilot program. Enhanced education programs would instruct personal watercraft users on ways to avoid adversely affecting recreation area resources, including wildlife.

Public Comment:	*Commenter:*	*Affiliation:*
1168G	American Canoe Association	Organization

Issue 8: ***Use of New Personal Watercraft Engine Technology Will Not Reduce Adverse Impacts on Wildlife***

A *Comment*: Scientists and researchers are finding that personal watercraft, even with the prototype technology, still cause significant damage to the environment and wildlife. Researchers from the University of Reno, Miami University and Michigan State University have found that personal watercraft engines produce pollutants such as PAH which are toxic to plants and animals even at the minute levels of parts per trillion. The prototype technology is unlikely to improve the craft's horrific safety record or reduce its impact upon wildlife.

Response: It is anticipated that more combustion-efficient engines in personal watercraft would reduce pollutant emissions to air and water in the same manner as increased efficiencies in automobile engines, combined with catalytic converters and other technologies, decreased the amount and types of automobile exhaust emissions. EPA-sponsored evaluations of different personal watercraft engine designs and emissions concluded that emission reductions would result with implementation of the EPA 2006 emission standards for marine engines. The modified preferred alternative (alternative B) provides for further protection of wildlife in the recreation area. Phasing in of new personal watercraft technology under the modified preferred alternative (alternative B) would reduce impacts on aquatic and shoreline species by reducing the discharge of fuel components into the water. These reductions should indirectly benefit wildlife by reducing some of the contaminant loading of surface waters.

PAH toxicity to fish and wildlife species is a complicated topic because PAH consist of dozens of different chemical compounds, each of which has substantially different toxicity characteristics in water, sediment, and soils, and toxicity varies dramatically among different fish and wildlife species. The ecotoxicological analysis for PAH reported in the *Final Environmental Impact Statement* explains the chemical, physical, and biological conditions that were used to conduct the assessment of PAH effects to fish species.

Public Comment:	*Commenter:*	*Affiliation:*
1127B		Individual

Issue 9: ***Personal Watercraft Disproportionately Impact Wildlife***

A *Comment*: Wildlife studies indicate that personal watercraft disproportionately impact wildlife, such as birds and marine mammals.

Response: The wildlife impact analysis completed for the Glen Canyon National Recreation Area considered a large body of technical information that addressed observed and tested effects of personal watercraft and other motorized watercraft use on various fish and wildlife species and to wildlife in general. Some of the available literature discussed effects to some wildlife species and not to other groups. Some of the available literature noted that personal watercraft use was less or no more disruptive than other types of motorized or muscle-powered watercraft. A common theme in many of the research findings was that much of the wildlife effect depended on a complex of other environmental variables than just the type of watercraft. The National Park Service considered all these findings in conducting an objective and balanced impact analysis. The literature results were used as appropriate within the physical and ecological conditions that prevail at the national recreation area.

For example, disturbances and impacts reported for marine mammals were not used in the analysis because the national recreation area is a freshwater lake, not a coastal marine or estuarine environment. Potential impacts and conflicts of personal watercraft with ground-nesting bird colonies were considered as a potential effect early in the planning process, investigated and determined to be not applicable because there are no known nesting colonies of shorebirds or other bird species present at Lake Powell that might be susceptible to personal watercraft operations in shallow-water areas or along shorelines.

Lake Powell does not support either a salmon fishery or migrating humpback whales, so these types of potential impacts were considered not applicable for the Lake Powell environmental setting.

Public Comment:	*Commenter:*	*Affiliation:*
1002H, 1002J	Bluewater Network	Organization

Issue 10: ***Personal Watercraft Use Disturbs Wildlife Activity in the Immediate Vicinity of Lake Powell***

A *Comment*: Personal watercraft disturb wildlife such as shorebirds and bighorn sheep within the vicinity of Lake Powell.

Response: The *Draft* and *Final Environmental Impact Statements* considered, analyzed, and reported on the potential effects of personal watercraft operation to desert bighorn sheep (see the "Wildlife and Wildlife Habitat" section in the "Environmental Consequences" chapter). That analysis concluded that desert bighorn sheep occur sporadically near the lake's water interface during the winter months, because the lake is considered the lower limits of their historical winter range. The winter months are typically the lowest-use months of the year. The frequency and intensity of personal watercraft / bighorn sheep interactions were considered by the National Park Service wildlife biologist as quite low. The bighorn sheep also tended to be observed in close proximity to human dwellings, which suggested a level of tolerance of human activities. All these circumstances and reports were considered in the impact analysis.

In addition, the modified preferred alternative (alternative B) provides for further protection of wildlife in the recreation area. Phasing in of new personal watercraft technology under the modified preferred alternative (alternative B) would reduce impacts on aquatic and shoreline species by reducing the discharge of fuel components into the water. A lake management plan will provide the tools necessary to analyze activities that take place on the lake and determine if unacceptable impacts are occurring using information gained from a three-year pilot program. Enhanced education programs would instruct personal watercraft users on ways to avoid adversely affecting recreation area resources, including wildlife.

Public Comment:	*Commenter:*	*Affiliation:*
139A		Individual

Business
Comment Letters

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Lake Powell
America's Natural Playground.

Robert J. Seney
Vice President of Operations

November 26, 2002

Ms Kitty Roberts, Superintendent
Glen Canyon National Recreation Area
National Park Service
P. O. Box 1507
Page, AZ 86040

Reference: Draft Environmental Impact Statement, Personal Watercraft Rulemaking, Glen Canyon National Recreation Area

Dear Ms Roberts:

ARAMARK Sports and Entertainment Services, Inc.'s Parks & Resorts division provides concession services at various government-administered areas including Glen Canyon National Recreation Area ("GLCA"). These services include renting and servicing personal watercraft ("PWC").

ARAMARK's environmental stewardship at GLCA is demonstrated by various programs we sponsor including the "Trash Tracker" litter clean-up program, lakewide sewage pump-out program, graywater containment program, lake-wide recycling program (in which we recycle approximately 1 million pounds annually at GLCA), and Green Suites motel amenities program.

We further demonstrate environmental responsibility by integrating EPA 2006-compliant engines and watercraft into our boat rental fleet as product becomes available on the market. We are proud of our accomplishments and work to ensure that the impact of our services on GLCA's resources remains minimal.

The National Park Service ("NPS"), ARAMARK, visitors, local businesses and residents, other partners and interested parties share concern in maintaining and preserving the resources at GLCA including Lake Powell.

As the NPS concessioner at GLCA, we feel we are uniquely qualified to comment on the management alternatives proposed by the Draft Environmental Impact Statement for PWC use within GLCA. Besides our own PWC rental fleet, we host over 3,160 boat storage customers, many of whom are owners or users of PWC at Lake Powell.

Background Comments

1. We support and recognize the statutory authority that enables the NPS broad discretion in management decisions concerning GLCA, the resources within and the public values and various uses of these resources. We believe the management of PWC use within GLCA through the Superintendent's Compendium (Park-designated PWC use) was appropriate (the March 21, 2000 "Personal Watercraft Use Within the NPS System" Final Rule).

2. We disagree with certain special interest groups' assertion that the NPS' PWC Final Rule was "arbitrary and capricious". We believe the enabling legislation of GLCA specifically supports the use of all forms of watercraft and that the NPS was well within its realm of authority in prescribing PWC use within the context of the Superintendent's Compendium.

3. We disagree with PWC being made subject to regulation and restriction as a unique user group or class of watercraft. Specifically with regard to air emissions and the purported air quality impact of PWC's, the EPA's October 4, 1996 "Air Pollution Control" Final Rule recognized engine types rather than a user group. PWC design is already well under way to meeting the year 2006 75% reduction in exhaust emissions, as well as voluntarily being 75% quieter than 1998 models.

4. We disagree with certain special interest groups' assertion that the NPS park-designated Final Rule constituted a major federal action requiring conformance with the National Environmental Policy Act ("NEPA"). In consideration of the EPA's 1996 "Air Pollution Control" Final Rule, we disagree the continued use of PWC's within GLCA has the potential for significant impact and believe that this draft Environmental Impact Statement (EIS) is an unnecessary waste of government resources and taxpayers' money.

5. We disagree that one particular class of watercraft should be subject to a special rulemaking. We support boating industry associations and the boating industry in general in that the Administrative Procedures Act does not permit discrimination against one type of boater or user group. An EIS required under NEPA is appropriate in order to prove PWC use is appropriate at GLCA.

6. We believe the Draft EIS will prove that PWC use at GLCA is appropriate to, and congruent with, the enabling legislation of GLCA and the mission and goals of the NPS.

7. We believe certain special interest groups to be exclusionists whose ultimate aim is to ban ALL forms of motorized recreation from public lands and are not the true, primary stakeholders at GLCA. We recognize the legal right these groups have in pursuing their beliefs through legal channels. However, we object to the waste of government and taxpayer resources spent debating PWC use.

   A positive outcome of this process, however, is that PWC use at GLCA will likely continue under recognized management guidelines. The majority of the public and users of Lake Powell will be better served in the long run by having had the chance to provide comment and input on the management of our public lands.

ARAMARK's Position – GLCA Draft Environmental Impact Statement

1. We generally support the NPS' preferred management "Alternative B".

2. We believe PWC use has not and will not impair the resources of GLCA. The Draft EIS "Table 2: Summary of Alternatives" compares management "Alternative A" (existing, or baseline use) with the preferred management "Alternative B". These excepts quoted from Table 2 regarding "Alternative B" support our position:
   - No impairment of water quality resources
   - No impairment of air quality resources
   - No impairment of the natural soundscape (beneficial effect in restricted areas)
   - No impairment of wildlife or wildlife habitats (elimination of PWC use along 113 miles of tributary rivers would have a negligible beneficial effect)
   - No impairment of endangered or threatened species resources or designated critical habitats (beneficial, negligible benefit from eliminating PWC access to upper parts of tributary rivers)
   - No impairment of shoreline vegetation resources
   - Negligible to minor beneficial effects on visitor use and experience

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November 26, 2002
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- Negligible to minor benefits to visitor conflicts and visitor safety
- No impairments to cultural resources
- Negligible impacts to the socioeconomic environment
- Minor impact to NRA management and operations implementing new management alternative

As demonstrated above, there is very little substance between the "no management plan Alternative A" and the "preferred management Alternative B". We feel that the EIS process has proven that continued use of PWC at GLCA is not detrimental to park resources.

3. As stated in the Draft EIS discussion of the alternatives, existing Utah and Arizona boating laws and regulations still apply under preferred "Alternative B". According to the Draft EIS, the level of law enforcement at the recreation area is already insufficient to adequately patrol activities on land and on Lake Powell during peak use seasons.

   Additional rulemaking and restrictions on PWC use will only serve to further dilute the presence of law enforcement. We believe NPS' efforts to seek additional funding for increased law enforcement activities are independent of any management alternative. Simply put, existing laws already govern the actions of all boaters. Additional law enforcement presence would benefit all boaters whether or not a PWC management plan is implemented.

4. We support mandatory boater education and/or licensing (where education is an element of licensing) on either the State or Federal level. We believe that boater education and increased awareness benefits all issues of concern for boaters, including PWC use.

   We require boater education as part of our boat rental program. We provide this mandatory education in various formats, including written instruction, video presentation, signage and scripted instruction. PWC renters are no exception to our education efforts.

5. Where education is made a part of any management plan, advances in boater safety should be attributed to enhanced education and awareness and not attributed to onerous restrictions and other questionable management practices of dubious value.

Conclusion
As stated above, we generally support management "Alternative B" described in the Draft EIS. We believe that increased boater education, increased law enforcement presence and stricter enforcement of existing boating laws will provide the only measurable benefit to multiple use waterways such as Lake Powell.

ARAMARK Sports and Entertainment Services, Inc.'s Parks & Resorts division looks forward to working with the NPS and other agencies in providing a safe and enjoyable boating experience on Lake Powell.

Sincerely,

Robert J. Seney
Vice President of Operations

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page 1 of 1

B.B.
FINANCIAL
BENEFITS
GROUP, INC.
[redacted]

B.B.
FINANCIAL
BENEFITS
GROUP, INC.
Steven C. Bond, MGA
Estate Preservation Specialist
[redacted] [redacted]

GLCA-00195

Dear Kitty Roberts.

I wish to choose Alternative "A" as my family's Choice, we use our watercraft Responsibly & safely we want to see it Remain the same as it is Before Sept. 2002 we will Not come to Lake powell if we can't use our P.W.C.

Thank you

The Bond Family

CHARLES GUSTAFSON, P.C.
ATTORNEY AT LAW

[redacted]

October 7, 2002

Kitty L. Roberts
Superintendent
Glen Canyon National Recreation Area
P.O. Box 1507
Page, AZ 86040

Re: Public Comment – Personal Watercraft Rule Making at Glen Canyon National Recreation Area

Dear Ms. Roberts,

My comments are delivered to you after having reviewed the entire draft of the Environmental Impact Statement of September 2002. In particular I have read carefully the entire summary and selected portions of the main study.

I have lived and worked in the Flagstaff area for approximately 25 years, but it has been only the past five or six years that I have spent time at the Glen Canyon Recreation area, Lake Powell. I was raised in Minnesota where water related activities, yes that includes ice fishing, are a way of life. My wife of twenty years is from Salt Lake and shares a common background in outdoor activities, particularly around the water. When our children could be safely herded around boats and water, we decided that Lake Powell was the perfect place to focus our family togetherness and healthy activities. We have a fifteen year old, a twelve year old and a ten year old, two boys and a girl, who have spent most of their years during the summer enjoying the beautiful and unique places of Lake Powell. We are fortunate to enjoy the relative comfort of a Sea Ray Sundancer 250 which we use as something of a summer cabin at the Lake. The boat is a moveable cottage.

Our Seadoo PWC is the vehicle which all of the children have learned to water ski behind and to appreciate the challenges of responsible boating. The two oldest have participated in the Utah State Fish and Game Program of Responsible Boating and have both been well trained in safe use of a PWC. While the boat remains anchored and secure as a base camp, the PWC is a versatile and simple watercraft that is available to the entire family. Clearly the Lake Powell experience would be vastly different without

it. I am certain that the children would not be as proficient at water skiing and other recreational activities if they had had to learn behind the Sea Ray. While some may think that is a frivolous issue in the broader scheme of life, I can assure you that our goal in focusing activity at Lake Powell was to emphasize family and individual strengths.

When we visit Lake Powell we generally find an isolated area where there are no outside influences. There are no computers or TVs and we listen to only the radio for news, usually NPR. We are self-sufficient which has caused us to work together as a team. As a result the children have developed a unique and healthy relationship. The PWC has been the vehicle to teach them responsibility and accomplishment. They all have an appropriate and positive sense of self-esteem.

I feel that Public Law Number 92-593 with its stated goal of "to manage recreation areas so that it provides maximum recreational enjoyment to the American public and their guests" makes compete sense. With more than a million and a quarter acres of land and water, it seems trifling to single out the PWC as a vehicle which might be eliminated. According to the draft summary, alternative C has no real significant benefit in any category. At best there are short-term moderate affects. I prefer alternative A for a variety of reasons. Several of the reasons are subtle and relate to the intangible qualities that I have referenced above. The study suggests that continued use of such watercraft have negligible to minor long-term effects on Lake Powell waters.

Life involves compromises, hopefully with the good outweighing the bad. In weighing the good over the bad in this case, it is clear that the good in our experience greatly outweighs the bad. Through education and example, the good will prevail.

What concerns our family is that the movement against a very selected device might become the beginning for the end of all types of vehicles at Law Powell. For those who oppose PWCs at Lake Powell, I perceive a tendency to be against any form of enjoyment in nature that involves a manmade or mechanical device. That perspective is clearly absolute in nature and contrary to the public laws which have been carefully considered and enacted.

Obviously Plan B is a compromise that we can all live with for now as it would have no significant effect on most activity on the Lake. What concerns me however is that it is pure and simple appeasement to a relatively small but very vocal and well-funded group of naysayers. If there were clear and articuable benefits in taking actions against the PWC, I would certainly support reasonable restrictions. But after it is all said and done, there really is no measurable benefit in restricting PWC use. For whatever reason, the PWC has come under the spotlight on a political stage. Ultimately it seems to me that this case and controversy has more to do with a political power struggle than it does the health and welfare of Glen Canyon and the millions of people who have every right to enjoy it, cherish it and preserve it. Driving away a relatively significant number

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CHARLES GUSTAFSON, P.C.
ATTORNEY AT LAW

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of individuals who lawfully own and operate PWCs does nothing to promote the area whatsoever.

In conclusion, I hope you will consider my thoughts and comments carefully. I am an individual who has spent time at the Lake and who has taken time to review the draft study. For the reasons outlined above, please leave the existing rules in place as they are more than sufficient to appropriately regulate the use of PWCs. If it ain't broke, don't fix it, and I ask you not to give in to politically charged rhetoric.

Sincerely,

Charles Gustafson

Chiropractic Associates, Inc.
Harold W. Gunn, Jr. D.C.
[redacted]

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page 1 of 1

10/31/02

NATIONAL PARK SERVICE
GLEN CANYON NRA
ATTN: PARK PLANNING
PO BOX 1507
PAGE, AZ 86040

GLCA - 00616

RE: USE OF PWC ON LAKE POWELL

TO WHOM IT MAY CONCERN:

THE USE OF PWC ON LAKE POWELL SHOULD BE ALLOWED. BESIDES WATER STORAGE & ELECTRICAL PRODUCTION ONE OF THE GREATEST VALUES OF LAKE POWELL IS ITS RECREATION. ONE OF THE PURPOSES OF THE NPS IS TO OVERSEE THE NP SO THE PUBLIC CAN ENJOY A QUALITY RECREATIONAL EXPERIENCE, NOT TO ELIMINATE THESE EXPERIENCES. A FEW PEOPLE MAY NOT BEHAVE CORRECTLY BUT DON'T PUNISH THE MAJORITY.

THANKS FOR YOUR TIME & HELP IN THIS MATTER

GLCA-00763
page 1 of 1

From: Stuart Reid [redacted]
Sent: Sunday, November 10, 2002 12:19 PM
To: GLCA@den.nps.gov
Subject: PWC at Lake Powell

> Dear Sirs:
>
> I have owned a time share on a houseboat at Lake Powell for the past five years. We truly enjoy our time at Lake Powell each year and this time is enhanced by the use of PWC to explore areas that we couldn't see from the houseboat and to do grocery and ice runs at one of the marinas. I am the president of the corporation that owns the houseboat Desert Phantom and we have a group of 22 owners. If PWC are eliminated from Lake Powell I would guess that we would sell our share in the boat, if possible, because we would be limited to just cruising and parking our houseboat for ten days.
>
> I am sure some regulation is needed but lets not throw the baby out with the bath water. Lake Powell and its myriad of canyons and coves should be available for total exploration and this can only happen if PWC are able to be used for transportation. From the DEIS I would personally prefer Plan A but Plan B would be an acceptable compromise. The beauty of Lake Powell should be shared and it cannot be if a significant portion is hidden from the public. Please allow PWC use to continue at Lake Powell.
>
> Stuart Reid, President
> Desert Phantom Inc.
>
> [redacted]
>
> [redacted]

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MR. TOM HANCOCK: I am one of the owners of Lake Powell Waterworld, with my wife.

This has impacted our business tremendously. And the government should have had their heads above the water and known, when they signed the deal to shut down in November. Had it been December or January, when people don't come to the lake that often, it wouldn't have impacted our business. But I'd say we have probably lost a hundred and fifty to two hundred thousand dollars for the season because of their inept knowing that it was going to take them longer to make a study that should have been a simple study, but they decided to give them a great big study and do it one time. And they should have known that that study was going to take longer than what they signed the paper for.

Now, if they only shut down the certain canyons that are on one of the proposals, that's fine. But this lake is too large and there are too many people in income brackets -- In 1974 boats cost four thousand dollars. Now boats cost anywhere from fifty to sixty thousand. So a young couple with two kids

Business

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that want to see this lake, to see Rainbow Bridge, and see the beauty of it and share it with their kids, with no houses, no telephone poles, like the west was when it was wilderness, they can do that for eight, ten, fourteen thousand dollars, by buying a personal watercraft that three or two or four of them can go on and enjoy the lake. They can camp. They are big enough, they are clean enough.

And the industry has cleaned up their act since 1988, when Sea-Doo first came out. And Sea-Doo has been at the forefront of innovation for cleaner air, less noise. But the tree-huggers in San Francisco do not even do their homework and read the things that have been done to clean them.

But the main thing is: They want to drain the lake. And it would stink clear to the Mississippi from the smell of this lake if there was no water in it. Plus, if they want to eat and they want to turn their lights on in their houses in California, they need to understand that we need the water to fill up the other lakes that make electricity for them and go out to the fields to irrigate the lettuce and the tomatoes and the soybeans and all the stuff so that we can feed the population of this country.

You know. It's like they should carry

signs that say: "I am a stupid person".

That's about it.

- - -

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page 1 of 1

[redacted]

November 22, 2002

Kitty L. Roberts, Superintendent
Glen Canyon National Recreation Area
P.O. Box 1507
Page, AZ 86040

Dear Superintendent Roberts

This letter comes to you expressing support of Alternative A regarding the Draft Environmental Impact Statement ("DEIS") for Personal Watercraft ("PWC") Rule-Making in the Glen Canyon National Recreation Area. PWC provide a rational means of access to Lake Powell, and I am in strong support of continued access and public enjoyment of this treasure.

Lake Powell provides a spectacular outdoor setting for many water-based recreation activities, including PWC use. Lake Powell is a momentous expense visited by many seeking to share quality time in a spectacular outdoor setting. Not to mention the socioeconomic gain for local communities as a result of these visits, much of which is directly or indirectly attributable to PWC riding opportunities at Lake Powell.

The DEIS manifest that PWC have insignificant impacts on the Lake's physical resources. Monitoring evince that water and air quality levels are well within the most stringent EPA standards. Like wise, there are insignificant impacts from PWC (and other motorized craft) on the area's wildlife, vegetation, and resources. PWC sales have decreased to less than 10% in the last 5 years (our PWC sales in 1997 = 150, in 2001 = 5, YTD 2), and with new regulations already in place, 2 cycle PWC usage is on the decline. Therefore the minimal impacts existing to date will be substantially decreased as the public transitions to cleaner and quieter technology being supplemented by the industry. The DEIS correctly indicates that a PWC ban would not meaningfully further any physical resource conservation intention.

In efforts to ameliorate the PWC recreating experience the State of Utah has imposed statutes requiring enthusiasts under legal driving age to successfully complete training and testing ensuring their ability to safely operate watercraft. As well as, stronger forfeit for those found to be under the influence of regulated substances while operating PWC.

There will always be a few individuals dissatisfied with any recreational experience. The agency should not be distracted by the hidden agenda of this disgruntled minority. The DEIS demonstrates the vast majority have highly rewarding experiences at Lake Powell. "Social conflict" is practically non-existent and we urge you to renounce efforts by anti-access special interests to "fashion" conflict in this process.

If restrictions are necessary they should be minimal, and encompass all motorized access (not only PWC) from a select few areas reserved strictly for fishing. Restrictions beyond those suggested in Alternative B of the DEIS would unjustifiably eliminate positive family-oriented recreation with no offsetting resource or recreation benefits. I urge you to adopt Alternative A as described in the DEIS and allow meaningful PWC access to continue at Lake Powell.

Sincerely,

Bruce T. Steadman
Steadman's Recreation Inc.

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Comments Received

09/13/2002

1.I am unable to attend the Grand Junction forum because I am currently running for Avon Town Council and a their meeting is the same night. Also a Town Council Candidates Forum is scheduled following the meeting.

Please pass these comment on to all responsible parties.

Alternative A is the most desirable from my family's standpoint. I have printed and reviewed the 2002 Superintendent's Compendium and concur with this Alternative.

Alternative B's suggestion that it 'reduces visitor conflict' should not be part of a decision whish is based on an Environmental Impact Statement. If 'visitor conflict' is a problem, then tightening patrolling is a solution. This Alternative could be lived with, but is far from the first choice.

Alternative C is unacceptable in any way, shape or form.

With the evolution of the EFI PWC's and the introduction of the 4-stroke technology, I believe this 'problem' is self correcting. The required updated emission standards are taking care of environment.

I will review the Draft EIS and be back in touch my email, shortly.

Sincerely,

TAB Associates, Inc.
The Architectural Balance

Tab Bonidy, NCARB

[redacted]

Organization Comment Letters

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PAGE

AMERICAN CANOE ASSOCIATION, INC.

Established 1880

Affiliated With:
Paddlesport Publishing Inc/Paddler Magazine
Professional Paddlesport Association

November 26, 2002

Ms. Kitty L. Roberts
Superintendent
PWC DEIS
Glen Canyon Recreation Area
P.O. Box 1507,
Page, AZ 86040

Re: Glen Canyon Personal Watercraft Use Draft Environmental Assessment.

Dear Superintendent Roberts:

The American Canoe Association (ACA), on behalf of its 50,000 members, and the more than 25 million Americans who enjoy paddlesports (canoeing, kayaking, and rafting), submits the following comments regarding the Glen Canyon National Recreation Area Draft Environmental Impact Statement (DEIS) on personal watercraft (PWC) use

First, the ACA does not believe that the DEIS provides an adequate range of alternatives. An alternative that specifically limits PWC use to the large, wide-open portions of Lake Powell and prohibits PWC use from a greater portion of the lake's narrow coves and canyons is needed. Also, none of the alternatives offer a shoreline buffer adequate to protect other waterway users and wildlife from the safety hazards and disruption associated with PWC use. The DEIS simply fails to represent a full spectrum of reasonable options.

ACA believes that the selection of alternative B as the "environmentally preferred" alternative is not supported by the facts. The ACA was prepared to accept an alternative that allows for continued PWC use on a significant portion of Lake Powell, but since the only alternative offered that adequately protects the safety and recreational experience of other visitors from the impacts of PWC use is alternative C, the ACA must go on record as supporting alternative C.

The DEIS also fails to adequately research the impacts of Personal Watercraft (PWC) use. In July the ACA released a report entitled *Hostile Waters, The Impacts of Personal Watercraft Use on Waterway Recreation*. A large amount of the information presented in this report is from public sources that NPS also has access to. The report assesses the impacts PWC use has on public safety, on the recreation experience of other waterway users, and on the environment. In each of these areas of PWC impacts the DEIS overlooked critical information that was readily available. I have provided copies of the aforementioned ACA report as part of these comments.

A very serious flaw in the DEIS is its failure to adequately assess the safety threat posed to park visitors by PWC use. The EA does not adequately analyze existing accident data available from the United States Coast Guard (USCG). The information considered in the DEIS with respect to safety is limited to 1997 data on accident numbers and injuries and the 1998 National Transportation Safety Board (NTSB) report. More diligent research into the USCG Boating Accident Report Database (BARD) would have also found that PWC, which comprise only 6.5 percent of vessels, are involved in 55 percent of all vessel-on-vessel collisions, that 70 percent of all PWC accidents are collisions, and that PWC are more than 3 times as likely to strike a person swimming in the water as other vessels.

Involvement in any collision indicates vessel operation that places other waterway users at risk. The vast majority (70%) of PWC accidents are collisions; many of these are collisions with other vessels. In fact, 12,218 PWC were involved in vessel-on-vessel collisions from 1996 through 2000, compared to 7,385 motorboats. Astounding numbers given that motorboats in the U.S. outnumber PWC by a margin of 6-1. This disparity has not improved over time, in fact the PWC collision data for 1999 and 2000 is worse than previous years. None of this data was considered in the DEIS. The claim in the DEIS that PWC use primarily poses a safety threat PWC operators is not accurate.

The DEIS also falls short of adequately examining the adverse impacts of PWC use to canoeist and kayakers. There is no evidence that NPS surveyed paddler perceptions of Lake Powell, the lake's appeal (or lack thereof) to canoeists and kayakers, or how PWC impact their visitor experience. The DEIS appears to rely on visitation data and surveys that reflect little input from paddlers. Kayaking is the nation's fastest growing outdoor activity, yet none of this growth is reflected in Lake Powell's use figures. Given the scenic beauty of Lake Powell, the fact that canoeing and kayaking currently represents such a small portion of the visitation is curious. Odds are pretty good that the prevalence of PWC use is preventing an increase in canoe and kayak use

Based on comments to ACA from hundreds of canoeists and kayakers, encountering PWC is one of the most unnerving experiences a paddler can have on the water. PWC use greatly diminishes or destroys a paddler's recreational experience. While the DEIS acknowledges personal watercraft users "tend to operate close to shore or in confined areas, and often travel in groups," the preferred alternative does little or nothing to address the resulting impacts to visitors who canoe, kayak or otherwise recreate in near-shore environments.

Additionally, the visible and audible pollution from PWC significantly impact other recreational activities, wildlife and waterway quality. Although other types of motorized watercraft also emit pollution, the operational characteristics of PWC use — such as staying in one area for long periods of time and the frequent acceleration and deceleration -- increase the impacts of PWC pollution on others. Even when equipped with direct injected two stroke or four stroke engines, the nature of PWC operation will continue to create unacceptable amounts of air and water pollution. Managing Lake Powell in a manner that encourages canoe and kayak use while decreasing PWC use would have a positive impact on the air and water quality of the lake without diminishing overall recreational use.

As with other portions of the DEIS, its assessment of PWC impacts to wildlife is incomplete and flawed. The DEIS does not adequately assess the adverse effects PWC use has, or may have, on Peregrine Falcons, Great Horned Owls, Bald Eagles, Golden Eagles and Western Yellow-Billed Cuckoos. Studies have shown that PWC use adversely impacts a wide variety of bird species. Tom Wilmers, a U.S. Fish and Wildlife Service biologist in Florida found that PWC have significant impacts on nesting osprey. Other research has found that PWC have adverse impacts on the Common Loon, Common Tern, Brown Pelican and Trumpeter Swan.

The DEIS also does not adequately assess the adverse effects of PWC use has, or may have, on Desert Bighorn Sheep or on river otters. NPS should not automatically assume that PWC impacts are negligible or acceptable to nesting birds and breeding mammals. Implementing a 1,000-foot shoreline buffer from high-speed PWC operation would provide much better protection to wildlife from PWC impacts. The tendency of PWC operators to stay in one area for long periods of time, the unique nature of PWC noise, and the high-speed, erratic operating characteristics of these craft have all been shown to have adverse and disproportionate impacts on wildlife.

The claims by the PWC industry regarding cleaner and less noisy PWC are greatly exaggerated. There are over a million PWC with conventional two-stroke engines currently in operation. These two-stroke PWC continue to be manufactured and sold. In fact, the vast majority of each PWC manufacturer's new product line-up is comprised of two-stroke PWC. Only a few of the new PWC models have four-stroke engines.

Many of the conclusions reached by the DEIS are not based in fact. NPS fails to consider readily available information about the impacts of PWC use, it reaches conclusions that do not follow from the evidence it presents, and it makes assumptions about PWC use and its impacts that are inconsistent with the findings of other NPS units. The ACA believes that this DEIS falls short of the NEPA standards for such an assessment and violates the settlement agreement between NPS and the Bluewater Network.

The ACA strongly urges you to utilize the information presented during this comment period, including these comments and the enclosed ACA report, to reevaluate the findings and recommendations of this DEIS. I trust that doing so will lead you to conclude that neither alternatives A and B will provide for the adequate management of PWC use. Given the numerous impacts PWC use has on other waterway users, if NPS selects alternative B, it will be affording preferential use for one user group to the detriment of all other users and to the resource. Please consider the safety and recreational needs of ACA members and others who do not recreate on PWC.

If you have any questions or comments about anything contained herein, or in the enclosed report, please do not hesitate to contact me at [redacted]

Sincerely,

David Jenkins
Director of Conservation
and Public Policy

Enclosures

November 27, 2002

Glen Canyon National Recreation Area
Attn: PWC DEIS
P.O. Box 1507
Page, AZ 86040

In Re: Support for Alternative B, with Reservations

Dear Superintendent Roberts,

I am writing on behalf of the American Watercraft Association (AWA), the largest personal watercraft (PWC) riders' organization in the country. The AWA represents PWC owners, enthusiasts, dealers, aftermarket parts suppliers, and rental operations throughout the country.

While we appreciate the fact that you have initiated the rulemaking process at Glen Canyon NRA to allow for continued PWC access, we are very disappointed that it has taken so long to complete the initial steps, locking PWC owners out of Lake Powell, one of the largest and most popular boating destinations in the Western United States. In addition, your negligence has already cost businesses in the Page area as well as in Colorado, Utah, Arizona, and New Mexico hundrods of thousands of dollars in 2002 alone, and could potentially cost these businesses millions in 2003 if a rule is not completed quickly.

With respect to the Draft Environmental Impact Statement, we agree with the comments submitted by the Personal Watercraft Industry Association (PWIA) as to the specific errors and omissions. This letter will not restate those, as time is of the essence in this rulemaking process, and the precious minutes it takes you to read this letter further delays the implementation of a PWC rule.

The majority of Americans feel that PWC do, in fact, belong on Lake Powell. Alternative B in the Draft Environmental Impact Statement does a good job in recognizing that fact, as it grants access to PWC in most waterways throughout the National Recreation Area.

However, there are some glaring problems with the Draft EIS as a whole, many of which are referred to in the PWIA comments, and in Alternative B.

Rainbow Bridge NM – Plan Should Include PWC Access

The Draft Environmental Impact Statement does not include any provision for the long-term management of the Rainbow Bridge National Monument, which should be included in the Glen Canyon lake management plan.

Rainbow Bridge NM is one of the most popular destinations on Lake Powell, and while lake levels are low, PWC will have access. However, if and when lake water levels rise, PWC will be permanently barred as a result of the original National Park Service PWC rulemaking of 2000.

Rainbow Bridge NM is one of the few National Monuments that cannot be accessed by road. The only way to visit it is by boat, and the National Park Service should not prohibit Americans who own PWC from accessing this part of the Glen Canyon National Recreation Area.

[redacted]

To date, there has been no plan to re-integrate Rainbow Bridge NM into the Glen Canyon lake management plan. There have been no proposals to allow for continued access to Rainbow Bridge NM, even though it is only off limits to PWC because of a technical glitch in the rulemaking process. There is no reason, environmental or otherwise, to continue with a ban on PWC at Rainbow Bridge NM.

No Wake Zones – Should Apply to All Boats or be Removed

In addition to the Rainbow Bridge access issue, which is so important to PWC owners, the no wake zones proposed in Alternative B is both illogical and poses a danger to PWC operators and their passengers.

There is no rational reason supported by science that would require PWC to operate at no wake speeds in areas where "conventional" boats could travel at unlimited speeds. PWC, in fact, produce fewer waves as a result of their operation, and therefore create less of an erosion problem, than these "conventional" boats. Some, like wakeboard boats which will be allowed, are actually designed to create large wake waves, with water ballast bags and other weighting devises that allow for wakes of up to three feet.

By comparison, PWC are designed to achieve a plane at lower speeds, and therefore create less erosion-causing wakes.

Forcing one type of boat to operate at no wake speeds poses serious health risks for their operators. Both the United States Coast Guard and the National Association of Boating Law Administrators oppose regulations that create different speed limits for vessels operating in the same waterway because it creates dangerous conditions where one boat is traveling at very low speeds and cannot avoid another boat traveling at high speeds.

This type of arrangement will force PWC operators to break the law in order to avoid collisions with other boats, and could lead to a dramatic increase in accidents on Lake Powell. I urge you to either remove the no wake zone requirement from Alternative B and all other proposed management options, or to require all boats to obey the same speed limits.

I look forward to participating in the remainder of the rulemaking process and hope that it is completed as quickly as possible. As always, please contact me if you have any questions regarding PWC or the AWA.

Respectfully,

Stephan Andranian, Esq.
American Watercraft Association

MOORE SMITH BUXTON & TURCKE, CHARTERED
ATTORNEYS AND COUNSELORS AT LAW

[redacted]

Stephanie J. Bonney
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Tammy A. Zokan*

John J. McFadden*
Of Counsel

* Also admitted in Oregon
‡ Also admitted in Washington
* Also admitted in South Dakota
* Also admitted in New Mexico

November 27, 2002

Delivered via Electronic Mail to GLCA@den.nps.gov
and via U.S. Mail

Glen Canyon National Recreation Area
PWC DEIS
P.O. Box 1507
Page, Arizona 86040

RE: Comments on Glen Canyon NRA PWC Rule-Making DEIS

Dear DEIS Team Members:

We are providing the following comments in response to the Glen Canyon NRA Draft Environmental Impact Statement for Personal Watercraft Rule-Making issued in September, 2002 (the "DEIS"). These comments are submitted on behalf of our client the BlueRibbon Coalition, a national organization championing responsible use of public lands (and waters) for the benefit of all recreationists. BlueRibbon has over 1,100 business and organizational members representing more than 600,000 individuals. BlueRibbon is recognized by the general public, the media and elected officials as a leader in promoting common sense and an equitable approach to recreation and access issues. Please consider these comments as independent of and supplemental to comments submitted by individual and organizational BlueRibbon members.

We urge you to select an alternative that will allow for reasonable personal watercraft ("PWC") access to the GCNRA. We recognize that well-organized and well-funded opposition exists to such use. The DEIS demonstrates that there is no sound scientific basis for elimination of PWC from the GCNRA. The DEIS presentation of the preferred alternative suggests you have seen through PWC opponents' "astroturf" campaign, and we encourage you to stay that course. Some may argue that the DEIS is illegally deviating from the settlement in *Bluewater Network v. Stanton*, D.D.C. Case No. 00-CV-2093. In reality, that settlement only guarantees that a process like that undertaken in the DEIS will occur, not that any particular

outcome is legally mandated. Litigation seems the inevitable result of nearly all meaningful modern-day NEPA decisions. Hopefully the day has passed when threats of litigation will influence public land managers' decisions allocating recreational resources. As it has in similar situations, BlueRibbon will assist in the defense of a reasonable PWC management plan for the GCNRA

BlueRibbon supports Alternative B as presented in the DEIS. One could argue the DEIS fails to present a justification for any restrictions on PWC use. Still, we believe that Alternative B's restrictions on PWC use are reasonable and can be accepted by PWC enthusiasts. Assuming a decision to allow *any* PWC use at Lake Powell will provoke some legal challenge, we believe that a decision adopting Alternative B will be more easily defended than one adopting Alternative A.

There are no physical resource impacts which justify PWC use restrictions beyond those contained in Alternative B. The DEIS contains reasoned analysis of water quality, air quality, "soundscape," wildlife population and habitat, T & E species, and vegetation impacts. Lake Powell is a unique site and PWC and other forms of motorized boat access are particularly appropriate uses of this site. Many may attempt to "fly-speck" one or more of these physical resource issues. Such attempts face a stiff challenge, for one cannot merely second-guess agency expertise in evaluating tough issues but must demonstrate the agency's analysis is lacking any rational support. *See*, *Marsh v. ONRC*, 490 U.S. 360, 378 (1989); *Motor Vehicle Mfrs. Assn. v. State Farm*, 463 U.S. 29, 43 (1983). Particularly relevant to the analysis is the fact that PWC noise and emissions will substantially improve under regulations outside the GCNRA process. DEIS at 15 (emissions); 105 (noise). In short, there is no physical resource "problem" and to the extent some vistors are dissatisfied with the present levels of negligible impacts those impacts will continue to be reduced with mandated advances in technology.

There are also no "social" impacts justifying PWC use restrictions beyond Alternative B. Anti-access organizations often attempt to create "user conflict" to justify restrictions on mechanized recreation. However, the DEIS analysis indicates "visitors overwhelmingly were satisfied with their visit to Glen Canyon National Recreation Area." DEIS at 133. The data from the University of Minnesota study shows that "conflict" is minimal and the greatest problems, such as "finding a beach campsite" and "litter on beaches and shoreline" are not associated with PWC use. *Id.* Opponents to an agency's chosen "social" balance face a particularly difficult task in proving the decision arbitrary or capricious. *See*, *Hells Canyon Alliance v. U.S. Forest Service*, 227 F.3d 1170 (9th Cir. 2000). The DEIS analysis demonstrates that the regulatory system needs only minor, if any, changes. The changes in Alternative B are more than sufficient to address any "social" issues analyzed by the DEIS.

PWC use generates and contributes to important socioeconomic benefits. As the DEIS notes, PWC-associated revenues "represent an important segment of the local and regional recreation-based economy." DEIS at 23. Communities like Page face difficult economic challenges, and PWC-based recreation provides important business opportunities for local entrepreneurs. *See*, DEIS at 147 (estimating 14,300 rental days originating in Page). PWC use attracts many visitors to Lake Powell, and these individuals and families spend money in the local economy. *Id.* at 148. In addition to these tangible economic benefits, the DEIS confirms that PWC use is a core element of the Lake Powell recreational experience. Roughly a million visitors enjoy PWC recreation at the Lake, or approximately half of all visitors. DEIS at 146. The DEIS presents no reason why these important social and economic benefits of PWC use should be diminished or eliminated. PWC use has important benefits and negligible impacts and should be allowed on Lake Powell in the manner outlined by Alternative B.

BlueRibbon appreciates the DEIS' thorough analysis of PWC access. Alternative B will not be universally popular, but strikes an appropriate balance in managing PWC use of Lake Powell. We ask that the GCNRA adopt Alternative B in its final decision so that appropriate PWC access may continue.

Very truly yours,

MOORE SMITH BUXTON & TURCKE, CHARTERED

Paul A. Turcke

/PAT

October 30, 2002

Superintendent Kitty Roberts
Glen Canyon National Recreation Area
Attn: PWC DEIS
P.O. Box 1507
Page, AZ 86040

RE: Comments on National Park Service's Draft Environmental Impact Statement and Personal Watercraft Rule-Making for Glen Canyon NRA

Dear Superintendent Roberts:

On behalf of Bluewater Network and the more than four million Americans we represent, we respectfully submit the following comments on the National Park Service's (NPS) draft Environmental Impact Statement (DEIS) and personal watercraft rulemaking for Glen Canyon National Recreation Area (NRA).

Support for Alternative C

Bluewater Network supports Alternative C, the no-action alternative, of the DEIS which would prohibit personal watercraft (PWC) from Glen Canyon NRA. We also urge the NPS to forgo the creation of PWC special regulations. Rather, we ask the NPS to allow the court-ordered deadline of November 6th to pass, permanently banning PWC from Glen Canyon.

PWC, better known by the trade name jetski, have been shown to cause significant damage to air and water quality, visitor enjoyment, public health and safety, endangered species, natural soundscapes, and wildlife. We have major concerns with the NPS' preferred alternative, which would permit PWC operation throughout much of the Recreation Area. Moreover, the NPS' analysis of PWC impacts in the draft EIS overlooks important research, reaches unsupportable conclusions, and appears to violate the terms of our court-ordered settlement agreement. Insufficient attention to these matters may render the DEIS ripe for legal review.

Glen Canyon is a National Treasure

Glen Canyon NRA is a national treasure and protects some of America's irreplaceable scenic vistas, geologic wonders, and cultural resources. The NRA also contains some of the quietest places on the planet.

Federal Mandates Require Preservation of Resources and Wildlife

Congress, with the passage of several acts, has made it clear that the National Park Service's (NPS) paramount mission is to protect the resources and wildlife contained within the National Park System from damage by recreational uses such as PWC. For example, the Organic Act (16 USC sec. 1), plainly states that the NPS is to leave park resources "unimpaired for the enjoyment of future generations." Moreover, this act clearly states that the only appropriate forms of recreation are those that leave park resources unimpaired.

The enabling legislation for Glen Canyon also requires the NPS to take strong action regarding PWC impacts. In particular, this act states that the NPS's primary goal at the recreation area is to provide for the outdoor public recreation is such a way as to "preserve scenic, scientific, and historic features contributing to public enjoyment of the area."

Additional federal and state laws direct the NPS to protect wildlife from PWC damage. The Endangered Species Act obligates the NPS to take proactive measures to prevent the taking of threatened or endangered species. Glen Canyon and the surrounding area are home to several federally listed species, including the Bald Eagle, the Humpback Chub, and the Western yellow-billed cuckoo, all of which could potentially be harmed by PWC operation.

Federal policies also require the NPS to take proactive measures to protect park resources from harm. Executive Orders # 11644 and 11989 unmistakably state that the NPS must close units of the park system to off-road vehicle operation (i.e. PWC) if the agency determines that such use is causing considerable damage to park resources. In addition, on September 8th, 2000, NPS Director Robert Stanton issued Director's Order #55. Director Stanton gave this order to provide park managers with a better understanding of their legal duties in managing the national park system, and to establish policies and procedures which ensure that the NPS' legal mandates are being properly and consistently applied.

Both Director's Order #55 and the 2001 NPS Management Policies provide better clarity on the NPS' fundamental purpose and mandate -- to conserve park resources and values. This purpose also includes providing for the enjoyment of park resources and values by the people of the United States. However, the order correctly notes that, "when there is a conflict between conserving resources and values and providing for enjoyment of them, conservation is to be predominant." Director Stanton recognized that while the NPS has the discretion to allow certain impacts within the parks, that discretion is limited by statutory requirements that the park service leave park resources and values unimpaired.

The following is provided to counter some of the more common arguments used by the PWC industry to block implementation of PWC-specific regulations.

PWC can be singled out for regulation

The PWC industry has claimed that PWC are recognized by the US Coast Guard (USCG) as "class A" vessels and therefore cannot be regulated differently than other motorboats. However, the USCG states that the term "class-A vessel" has no meaning insofar as Coast Guard regulations are concerned (see enclosed USCG letter). To date, the USCG has refrained from defining PWC. Rather, the Coast Guard encourages other government agencies to define the craft. The National Park Service determined that PWC are different from conventional motorboats and finalized PWC-specific regulations in March of 2000.

Use of FASFRA Funds does not guarantee PWC access

The PWC industry has long maintained that PWC riders have a "right" to use any boating infrastructure built using funds appropriated under the Federal Aid in Sport Fish Restoration Act (FASFRA). However, a 1999 Florida lawsuit negates this claim. In *Kissimme River Valley Sportsman's Association v. The City of Lakeland* (60 F. Supp. 2d 1289) (see enclosed copy), the United States District Court in Florida ruled that FASFRA does not create a federal right to equal access for boats of common horsepower ratings at boat launch facilities constructed or maintained under the Act. This case suggests that government agencies may prohibit PWC regardless of whether they have used FASFRA funds to construct boat launches and facilities.

PWC Operation Damages Lake Resources and Values

PWC are high-speed thrill-craft commonly used for no purpose other than to provide the operator with a high-impact thrill-ride. Unfortunately, these thrills come at an extraordinarily high price in the form of degraded air and water quality, threatened public safety, endangered wildlife, shattered natural quiet and diminished visitor enjoyment. For more on these impacts, please see Bluewater Network's comments on the National Park Service's PWC regulations (enclosed).

Numerous studies and reports have uncovered this significant damage. In particular, we wish to draw attention to the impacts PWC have on water quality, natural soundscapes/visitor enjoyment, public safety, and wildlife.

Water Quality Impairment

Nearly all PWC utilize conventional two-stroke engines, which dump between 25 and 30 percent of their gas and oil mixture unburned into the environment. The combustion process also produces several toxic compounds including polycyclic aromatic hydrocarbons (PAH), nitrogen oxide (NOx) and carbon monoxide (CO). In the report *Water Quality Concerns related to Personal Watercraft Usage*, the National Park Service admits that many of these toxic compounds are routinely found in lakes and reservoirs with PWC use, sometimes at levels which threaten both human and ecological health.

PWC destroy Natural Soundscapes/Visitor Enjoyment

Please find a copy of the report *Drowning in Noise: Noise Costs of PWC in America. Drowning in Noise* finds that PWC will impose an estimated $900 million in noise annoyance costs on beachgoers this year as well as hundreds of millions of dollars of additional costs to water recreationists and shoreline property owners. The report also documents that minimum-distance rules are only modestly effective, while supposedly quieter new models won't put much of a dent in the noise burden. The only way to slash the noise costs of PWC, the authors find, is to ban them from as many waters as possible.

PWC threaten public safety

According to Coast Guard statistics, PWC represent roughly 10 percent of all boats, yet are involved in approximately 30 percent of all boating accidents. Even more shocking, nearly 80 percent of PWC accidents are the result of a collision with objects such as another boat, swimmer, or dock.

A report by Bluewater Network found that roughly 24 percent of the PWC manufactured during the last ten years have been recalled due to production and/or design problems that could lead to fires and/or explosions. (Please see enclosed report: *Personal Watercraft Production/Design Problems: High Potential for Fires and Explosions.)*

According to the USCG's most recent safety data (1995 through 1999), both the number of fires and the injuries associated with those fires have increased more than 300 percent since 1995. Injuries associated with these fires have increased every year. Moreover, the safety data reveals that in more than two-thirds of all fire/explosion incidents, equipment failure and/or ignition of leaking fuel was the cause of the fire. By comparison, PWC riders' inexperience or reckless operation was responsible for less than seven percent of the fires. Bluewater Network's FOIA request also revealed that the production and design problems in tens of thousands of machines have not been corrected.

PWC disproportionately impact wildlife

Wildlife biologists throughout North America have testified on the existing and potential impacts of PWC use. In California, marine mammal experts have voiced their concern that PWC activity near seals, sea lions, and elephant seals disturbs normal rest and social interaction, and causes stampedes into the water that can separate seal pups from adult mothers. According to Judy McIntyre, researcher and director of the North American Loon Fund, PWC are the greatest current threat to breeding loon populations. Joanna Burger, author of a Rutgers University PWC study, observed PWCs skimming the edge of

islands and running over common tern nests containing eggs or chicks. Burger's study confirms that waterfowl respond "significantly more" to PWCs as compared to conventional motorboats. Officials at the Washington State Department of Fish and Wildlife's Ecosystem Management Program have gone on record to report that they are becoming "increasingly concerned with the effect of motorized personal watercraft... particularly jet skis, on both nesting birds and spawning salmon." And, the state of Hawaii classified PWC as "thrill craft," imposing strict areas of use for the vehicles in order to protect migrating humpback whales.

Many researchers have found that PWC cause lasting impacts to fish and wildlife. Two-stroke engines, the type that drive most PWC on the water today, have been shown to produce pollutants that cause significant damage to aquatic plants and fish. In addition, wildlife experts have testified that PWC have a high potential to create noise that is perceived as more annoying to wildlife than the sound generated by other sources such as conventional motorboats (Please see enclosed studies and reports for more on PWC impacts to wildlife.)

Marine biologists have also found that boat traffic alters behavior of marine mammals such as the bottlenose dolphin. Biologists from the Mote research center in Florida investigated the impacts of both conventional motorboats and personal watercraft (PWC) on dolphins and found that regardless of approach speed, PWC elicited a greater response and evoked greater changes in behavior than did conventional boats. It is believed that this is due to the unpredictable approach of PWC, as well as the fact that the machines are not acoustically detectable at the same distance as other watercraft. This lack of predictability translates into greater disturbance and potential danger. The researchers also found that the water depth at which a disturbance takes place is significant. Disturbance in shallow water produced a higher frequency of directional and inter-animal distance changes. This is particularly troubling considering PWC, unlike conventional boats, can access very shallow waters that historically have been used by dolphins as a sanctuary from boat traffic. The scientists warn that if these shallow waters are no longer safe havens for dolphins "then a dolphin's ability to sustain itself, avoid boat traffic, or a mother's ability to safely rear her calf could be comprised."This same logic can be applied to the behavior and disturbance level of fish and other marine organisms.

New Technologies still cause problems

Recently, there has been much news concerning so-called "new" PWC technology. Many PWC supporters claim that advancements in engine design, such as direct injection, will solve all environmental impacts related to PWC operation. Unfortunately, this is not the case, and researchers are finding that these new technologies still present significant environmental hazards.

Enclosed please find the California Air Resources Board (CARB) report *Outboard Engine and Personal Watercraft Emissions to Air and Water: A Laboratory Study.* The purpose of this study was to evaluate emissions from marine engines and personal watercraft operated under controlled test conditions. The primary goal was to compare emission levels across technologies, with particular emphasis on two-stroke vs. four-stroke engines and conventional vs. advanced fuel-management systems.

Air Pollution

For all measured air pollutants, two-stroke personal watercraft (PWC) and outboards were generally and substantially higher than comparable four-stroke engines. In the case of hydrocarbons (THC), two-stroke motors were far more polluting than comparable four-stroke motors.

Water Pollution

Similar to air emissions, pollutant concentrations in the water column of two-stroke and DI engines were consistently higher than those of comparable four-stroke engines. This was true for many pollutants including MTBE, benzene and acetaldehyde. Moreover, both the carbureted and DI two-strokes were found to emit polycyclic aromatic hydrocarbons (PAH). This is particularly troubling because PAH -- even at minute levels of parts per trillion -- are toxic to aquatic plants and fish. The research also found that concentrations of many of these pollutants remained substantially elevated in the test tank one full day after testing.

Direct-Injected Two-strokes and Four-stroke PWC still cause damage

CARB research also found that although direct-injected (DI) two-stroke engines were cleaner than carbureted two-strokes, on average they were far dirtier than four-stroke engines. For example, DI engines emit approximately seven times more total hydrocarbons (THC) than do four-stroke engines. THC is a key component in the formation of smog. In the case of formaldehyde, a possible human carcinogen, DI engines emitted more than both the carbureted two-strokes and four-stroke engines. While four-strokes were substantially better in terms of discharging less of some of the most important pollutants, they did not solve all problems. In the case of nitrogen oxides (NOx) and carbon monoxide (CO), the four-stroke engine emitted more than the DI engines.

Neither the DI nor the four-stroke PWC will do anything to address the impacts of the more than 1.1 million thrillcraft already operating on American waters. In addition, with the recent downturn in PWC sales, it will take longer for newer model PWC with the advanced technology to replace older PWC. In fact, at current sales rates, even if every new PWC sold were equipped with the new technology (which is clearly not the case), it would take nearly 12 years to replace all the dirty two-stroke PWC. Finally, it should be remembered that these new technologies are unlikely to improve PWC's safety record or decrease their impact upon wildlife.

The American public supports a ban on PWC

The vast majority of the American public supports the elimination of PWC use in the national parks. Recently, Zogby International released a poll which found that a more than two-thirds of the American public (67%) supports protecting the National Parks from motorized thrill-craft such as PWC (see enclosed results from Zogby poll).

Please find a copy of a Citizen Letter urging the NPS to prohibit PWC operation from the entire National Park System, including Glen Canyon National Recreation Area. The White House received nearly 30,000 of these letters during the comment period on the NPS' national PWC rule. Adding these comments to the more than 10,000 additional comments the NPS received calling for PWC restrictions means that approximately 4 out of every 5 comments on the national PWC rule supports reigning in PWC damage.

We request that the 30,000 Citizen letters be added to the administrative record as supporting a PWC ban at the Glen Canyon National Recreation Area. In addition, we ask that the NPS please include all of Bluewater Network's previous letters and correspondences sent to Glen Canyon concerning PWC activity in the administrative record for the general evaluation of PWC use.

Issues in the Draft EIS that need more attention

The following comments concern areas of the DEIS where Bluewater Network believes the NPS needs to devote more attention and additional resources.

Compliance with federal law

Federal laws such as the Organic and Redwoods Acts require the NPS to protect park resources and wildlife from damage. Specifically, the Organic Act bars impairment of park resources. The Redwoods Act requires the NPS to allow no "derogation" of park resources. According to the DEIS, it appears that the NPS believes that the "no impairment" and the "no derogation" mandates set the same level of protection. In fact, these two words have different meanings. According to the online version of Webster's Dictionary the word impair means to grow worse; to deteriorate. Common use of the word assumes that impairment of a resource is a process that results in its destruction.

Webster's Dictionary defines the word "derogate" as to take away; to detract, to withdraw. From this definition it cannot be assumed that the derogation of a resource automatically leads to its the destruction, rather the word merely implies that a resource is diminished in value. (Please see www.dictionary.com for these definitions.) Obviously, the "no derogation" mandate sets a higher level of protection and bars the NPS from allowing activities such as PWC operation which would "take away or detract" from park resources and values. Put another way, even if PWC operation at Glen Canyon was determined not to impair park resources, values and wildlife, the DEIS clearly shows that PWC use is derogating the NRA's environment and wildlife. Therefore, continued PWC use at Glen Canyon violates federal law.

Compliance with NPS Regulations

In March 2000, the NPS finalized regulations which prohibit PWC operation throughout the National Park System. As a result of an April 2001 court settlement, the NPS may consider long-term PWC operation at 21 park units only after conducting appropriate environmental reviews and promulgating special regulations. In the National Park Service's March 21, 2000, federal register notice for the PWC rule, the Park Service states that it will consult with and seek the expertise of "the Environmental Protection Agency, Occupational Safety and Health Administration and other cooperating agencies as a way of maintaining the environmental integrity of park areas." Among other issues, it is essential to investigate the impacts PWC have on water quality and visitor safety by "utilizing the expertise" of the agencies listed above and other agencies that have a mission to further resource protection and visitor safety. While the DEIS provides evidence that the NPS consulted with and sought out the guidance of the U.S. Fish and Wildlife Service and select state agencies, there is no evidence of collaboration with the other agencies listed above. This lack of collaboration appears to violate the NPS' PWC regulations.

Proper implementation of NPOMA and Director's Order #12

The DEIS on page 159 states that the National Parks Omnibus Management Act (NPOMA) requires the NPS to base its resource management decisions upon scientific and technical information. Moreover, Director's Order #12 (DO#12) says that if such information cannot be obtained, the NPS will modify a proposed action "to eliminate the action causing the unknown or uncertain impact or other alternatives will be selected." *(Emphasis added)*. DO #12 also states that when it is not possible to eliminate an activity with unknown or uncertain potential impacts, the NPS will provide background on the completeness of such information, the relevance of missing information, a summary of adverse impacts, and an evaluation of those impacts.

From the draft EIS, it appears that the NPS at Glen Canyon has concluded that much information regarding PWC use is too expensive and/or impossible to collect. In addition, given the NPS' preferred alternative which calls for continued PWC use, it appears that the agency has determined that PWC operation cannot be eliminated from Glen Canyon NRA. Unfortunately, the NPS provides no discussion in the DEIS as to why it is impossible to conduct additional Glen Canyon specific PWC studies. Moreover, the NPS' determination at Glen Canyon that PWC cannot be eliminated from the preferred alternative runs counter to the actions at dozens of parks across the country that have prohibited these machines.

Bluewater Network believes that a proper reading of the stipulations in DO #12 requires the NPS to choose an alternative which eliminates PWC operation.

The Good Faith Nature of the Review

Bluewater Network is concerned that the NPS' review of PWC and their impact upon Glen Canyon resources is headed toward a predetermined outcome. In particular, we believe the NPS has already rejected alternative C, the no action alternative, and regardless of the environmental impact discovered during the EIS process, PWC will be authorized at Glen Canyon. Materials released to the public, as well as NPS statements to the press have led us to this conclusion.

For example, at public workshops, the NPS distributed materials concerning PWC use at Glen Canyon. Three categories of information were presented during these workshops:

A) A timeline for rulemaking;
B) Glen Canyon authorization, mission, purpose, etc.; and
C) Resource Issues and Concerns

In the resource issues and concerns materials, the NPS discusses the potential impacts of PWC operation. The materials also provide bullet points on the NPS' management objectives in relation to those impacts. Finally, the NPS details the management prescription options the agency could employ to achieve its stated objectives.

In particular, the NPS lists twelve resources issues and concerns (air and water quality, visitor enjoyment, public safety, etc) and more than 60 management prescriptions for dealing with these issues. Unfortunately, not one of the listed management prescriptions calls for the elimination of PWC throughout Glen Canyon. Failure to list a ban as a possible management prescription calls into question the NPS willingness to consider this option.

We are also concerned with the public statements of NPS employees regarding the DEIS process. For example, Marianne Karraker was quoted in the *Salt Lake Tribune* on July 14, 2002, stating that a court-ordered ban, now scheduled to take effect on November 6th, "should be temporary." Moreover, the *Arizona Daily Sun* reported on June 6, 2002, that Superintendent Kitty Roberts stated that in the Final EIS, PWC might be banned only in some secluded slot canyons. These statements and materials suggest that the NPS has already made the decision to permit continued PWC operation at the NRA regardless of the public comment and review process of the DEIS.

Compliance with Court Settlement

On April 12, 2001, a Washington, D.C. District Court approved the settlement of Bluewater Network's court challenge of the NPS' PWC regulations. In that settlement, the Park Service agreed to conduct appropriate environmental reviews of the impacts of "PWC use in the particular unit." Specifically, the NPS agreed to evaluate PWC impacts upon "water quality, air quality, soundscapes, wildlife and wildlife habitat, shoreline vegetation, and visitor conflicts and safety." Unfortunately, it appears that in several instances in the draft EIS, the NPS has overlooked relevant information, reached baseless conclusions, submitted contradictory information, and not conducted current site-specific studies of PWC impacts, thereby violating this agreement. For example:

No Current PWC Counts

In appendix E of the DEIS, the NPS provides its rationale for providing estimations of boat use days rather than actual boats counts for the recreation area. Unfortunately, we believe that without true PWC counts, the DEIS's investigation of PWC and their impact upon Glen Canyon's resources and wildlife are highly suspect and may be ripe for legal review.

Putting the lack of accurate boat counts aside, the NPS doesn't even provide consistent estimations of the PWC days/hours in its DEIS. For example, in the Affected Environment's visitor conflicts and visitor safety section, the NPS states that PWC represent 26 percent of all boat days at Lake Powell. The NPS then states that accidents are just over half what would be expected from this level of use. The implication being that PWC operation at Lake Powell is safe relative to other boats. However, in the Environmental Consequences' Water Quality section, page 174, the NPS states than PWC represents only 17 percent of the boating hours on Lake Powell. This time the inference appears to be that PWC represent such a small slice of the lake's boating population that they contribute minimally to Lake Powell's entire pollutant loading.

The implications of the NPS failure to provide a single estimation call into question the accuracy of some of the DEIS' conclusions. For example, if PWC actually represent 26 percent of all boats at Lake Powell, then PWC should inflict a greater impact upon the park's water quality than estimated in the DEIS. On the other hand, if PWC only represent 17 percent of the boating population, they present a greater threat to public safety than is reported in the DEIS.

However, even if NPS PWC estimates are correct, NPS analysis fails to mention several PWC impacts, lacks site specific data, dismisses some issues and research, provides contradictory information and is therefore in violation of our settlement agreement. For example, the DEIS on PWC impacts lacks:

Supportable conclusion on PWC noise impacts

In the draft EIS, the NPS concludes that PWC noise will inflict "minor to moderate" short-term impacts upon the Recreation Area's soundscapes and "negligible" impacts upon visitor experience. It appears that the NPS believes this is due to the large amount of watercraft noise already at the lake. In addition, the NPS places much hope in new technologies significantly reducing PWC noise. These conclusions appear to be in error

and run counter to scientific research.

On page 16, the NPS makes reference to the study *Drowning in Noise: Noise Costs of PWC in America* (*DIN*) conducted by the Noise Pollution Clearinghouse. However, given the NPS conclusions regarding PWC noise, it appears that the Park Service did not use this study when it analyzed the impact of PWC noise on natural soundscapes and visitor enjoyment.

For example, as stated above, the NPS believes that because Lake Powell already experiences high levels of watercraft generated noise, the impacts of PWC upon soundscapes and visitor experience will be minimal. This conclusion overlooks a few simple facts which according to *DIN* differentiate PWC noise and make it more annoying than the noise generated by conventional boats.

First, PWC are designed and used differently from motorboats, in ways that typically make them far more annoying to other people in the same environment. PWC are primarily used throughout the day for high-speed thrills, often at full throttle. Motorboats, on the other hand, are often used as a form of transportation at less than full throttle. These two types of operation produce different types of noise.

Next, during typical PWC operation, the jet drives often leave the water. This magnifies PWC noise in two ways. First, without the muffling effect of the water, PWC noise can significantly spike. The NPS provides stark evidence of this phenomena in its graph on page 105 of the DEIS. Second, when the PWC reenters the water, its hull hits the surface with a loud "whomp." Sadly, PWC don't have to be operated in an aggressive manner to leave the water. According to *DIN*, because of their short hulls, a PWC ridden at high speeds on still or slightlychoppy waters will lift out of the water naturally. So whether by operators' intent or by vessel design, PWC wind up out of the water much of the time, certainly far more than do other motorboats.

The third characteristic that distinguishes PWC noise from that of conventional boats is their rapid and frequent speed change. Typical PWC use often involves rapid maneuvers and frequent speed changes at erratic throttle settings. As a result, the PWC impeller has no constant "throughput" and therefore no consistent load on the engine. Consequently, the engine's speed rises and falls from moment to moment much like a dentist's drill.

Scientific research by the National Physical Laboratory has discovered that rapid fluctuating noise, like that generated by PWC, is more annoying than constant noise such as that of conventional boats. (See enclosed summary of studies.) A varying noise commands the hearer's attention, making it especially bothersome. This guarantees that PWC's whirring and whomping noises, varying from moment to moment, will be much more annoying than the relatively constant sounds of conventional boats. Sadly, the NPS seems to minimize the negative impact the widely varying nature of PWC noise has on the NRA's non-PWC riders.

Finally, researchers have found that new technologies will not reduce total PWC noise costs. On page 44 of *DIN*, it states that noise costs would be cut by only 22 percent if all PWC noise were decreased by 3 dBA. A more significant reduction on the order of 75 percent would require an immediate drop of 14 dBAs. Unfortunately, noise reductions of these magnitudes are highly unlikely since there is little possibility that the existing fleet of more than 1.1 million machines (most of which are powered by conventional two-stroke engines) will be retooled to reduce noise. Furthermore, even if every new PWC were equipped with quieter technology, it is estimated that overall noise costs will still increase by 18 percent by 2005, due primarily to the increase in the number of machines on the water.

Information on PWC permeation losses and its impact upon air quality

On page 185 of the DEIS, the NPS admits that non-exhaust/permeation emissions were excluded from its analysis of PWC impacts to air quality. Surprisingly, the Park Service provides no justification as to why it chose to overlook this significant source of emissions and therefore is acting in an arbitrary fashion.

Permeation is the process by which individual fuel molecules may penetrate the walls of the various assembly components of a fuel system directly to the outside air. In California, the Air Resources Board (CARB) estimates that reactive organic gas (ROG) emissions from the 9.8 million untreated portable fuel containers (gas cans with nominal capacity of ten gallons or less) is 87 tons per day. This is equivalent to the tailpipe emissions from about 1 million cars. If these tanks had been left untreated, CARB projected that ROG emissions would have risen to 96 tons per day by 2010.

According to CARB, evaporative and permeation emissions from nonroad engines/fuel systems and gas tanks are significant. For example, CARB research found that a typical nonroad engine (5-gallon fuel tank filled to half its capacity) is likely to emit over 7 grams of hydrocarbon pollution in a 24-hour summer diurnal cycle. CARB also discovered that permeation emissions from nonroad fuel tanks, such as those in lawnmowers, could account for roughly 50 percent of the total fuel system emissions.

High-density polyethylene (HDPE) fuel tanks are particularly susceptible to permeation losses. CARB testing found that a Honda HDPE tank emits roughly 4.57 g/gal/day. According to the EPA, many of America's approximately 10 million off-road vehicles such as all-terrain vehicles, personal watercraft, and snowmobiles have similar tanks. (Please see enclosed CARB permeation fact sheet, and EPA proposed rule announcement for more on permeation losses.)

Failure to include in the draft EIS an analysis of PWC permeation losses and its impact upon Glen Canyon's air quality is a serious oversight.

Site specific data on wildlife impacts

Next, the draft EIS lacks site-specific information on PWC impacts upon Glen Canyon's fish and wildlife. While the NPS' DEIS provides general information regarding the potential PWC impacts to wildlife, no Glen Canyon research or studies are cited. However, despite this lack of site-specific information, the NPS states that the preferred alternative will produce "negligible to minor short-term impacts" for wildlife and therefore authorizes PWC activity throughout much of the Recreation Area's waterways. It is difficult to understand how theNPS could reach this conclusion, given the lack of park-specific wildlife information and the fact that it clearly runs counter to the body of research that found that these machines have a significant negative impact upon wildlife such as birds and marine mammals.

There also appears to be no discussion on PWC noise and its impact upon entire biomes. In his recent book, ***Wild Soundscapes***, Bernie Krause writes that wildlife habitats "have particular aural imprints" with different animals occupying differing sensory niches. Mr. Krause calls the unique manner in which creatures vocalize in a symbiotic relationship to one another a biophony. (For more on biophony. please see the enclosed chapter of ***Wild Sanctuary***.) In healthy habitats, certain animals such as insects occupy one sonic zone, while others such as birds, amphibians, and mammals occupy others. There is often no aural competition between these animals. Mr. Krause reports that a state of biophony has been recorded in both terrestrial and marine environments.

Human-caused noise can destroy the biophony. In fact, Mr. Krause has found a direct correlation between human noise such as that from a jet engine and its impact upon amphibians such as toads. In particular, Mr. Krause found that jet noise affected toads' defensive responses, leaving them much more susceptible to predation. Mr. Krause has also found that the loudness of a noise (dBA) frequently provides little indication of its impact upon wildlife. Often it is the quality or character of the noise that produces the greatest impacts.

Again, the NPS' failure to include site-specific data on impacts, as well as a discussion of PWC's impact upon biophony in the draft EIS appear to violate our settlement agreement and may be fatal flaws of the DEIS.

Site specific data on threatened and endangered species impacts

Like the section on PWC wildlife impacts, the draft EIS section on PWC impacts upon threatened and endangered (T/E) species also lacks sufficient site specific data. Once more, it appears that no research was conducted to determine PWC impacts upon the federally listed species found at Glen Canyon.

However, despite the NPS's lack of data, the Park Service concludes that its preferred alternative would not "adversely affect" T/E species. Again, Bluewater Network believes the lack of pertinent information makes it impossible for the NPS to support this conclusion.

A complete and fair public opinion survey

During the summer of 2001, the University of Minnesota (U of M) concluded a study of visitor characteristics and perceptions regarding personal watercraft use in Glen Canyon NRA. The study concludes that neither PWC users nor non-PWC users support eliminating the machines' use at the NRA. Furthermore, the researchers state that PWC operation does not appear to impact the recreational experience of park visitors. We believe these conclusions are incorrect.

First, the U of M researchers admit that they restricted their sampling to visitors of Glen Canyon NRA. Unfortunately, this limited sample size skews the study's results, causing the researchers to incorrectly conclude that there is little public support for a PWC ban at Glen Canyon. Glen Canyon NRA belongs to all Americans, not just those that happen to visit the park. A more representative poll of the American public recently conducted by Zogby International, clearly shows that a vast majority of the American public supports a prohibition on PWC operation in the National Parks including Glen Canyon NRA. Moreover, the study also clearly omits the opinion of a significant number of park enthusiasts who do not visit Glen Canyon because of PWC when they otherwise would visit the park in the absence of PWC.

Next, we find it interesting that the U of M researchers state that PWC do not impact the recreational experience of NRA visitors, yet their own results appear to reveal the opposite. On page six of the study, table four clearly shows that three of the top four problems cited by non-PWC users are related to PWC operation (unsafe PWC operation, PWC congestion, PWC conflicts). And given the fact that the PWC industry is selling roughly 100,000 new machines a year, we believe that unless the NPS at Glen Canyon takes strong action against the thrill-craft, PWC-related problems are only likely to increase and intensify.

Third, it should be remembered that this study is limited to gauging the popularity of PWC use and its impact upon the visitor experience at GCNRA. However, just because an activity may be popular does not mean it is appropriate for the national parks. The bear shows of Yellowstone and the Fire Falls of Yosemite are prime examples of popular activities that, in hindsight, are wholly inappropriate for the parks and were rightly terminated. Moreover, the study does not investigate the impact PWC have upon park resources and wildlife. PWC have been shown to cause significant damage to air and water quality, public health and safety, natural soundscapes and wildlife. And regardless of a recreational activity's popularity, if it causes impairment or the derogation of park resources and wildlife, it must be eliminated in order to ensure compliance with federal law.

Without a complete, fair, and comprehensive public opinion survey which includes the beliefs of park visitors who may be forced out of Glen Canyon due to PWC operation, the DEIS' sections on visitor use and visitor conflicts are incomplete. Furthermore, these sections do not provide enough information for the NPS to base sound professional judgements about PWC use and its impact upon visitor experiences.

Information on PWC fire and explosion risks as well as PWC threats to children

The NPS section on public safety downplays the threat PWC pose to the visiting public because it clearly lacks discussion or reference to several important studies and reports.

For example, we found no discussion regarding PWC fire and explosion hazards. As a result of a Bluewater Network Freedom of Information Act (FOIA) request, the United States Coast Guard (USCG) revealed that the personal watercraft (PWC) industry has recalled more than 280,000 watercraft over the past ten years with production/design problems that could lead to fires and explosions. The recalls affect roughly one out of every five PWC manufactured during this time period. Three major PWC manufacturers - Bombardier, Yamaha, and Kawasaki - were affected by the recalls. Most recently, Bombardier recalled more than 13,000 Sea-Doo watercraft for the 2000 model year.

According to the USCG's most recent safety data, both the number of fires and the injuries associated with those fires have increased more than 300 percent since 1995. Injuries associated with these fires have increased every year. Moreover, the safety data reveals that in more than two-thirds of all fire/explosion incidents, equipment failure and/or ignition of leaking fuel was the cause of the fire. By comparison, PWC riders' inexperience or reckless operation was responsible for less than seven percent of the fires. Bluewater Network's FOIA request also revealed that the production and design problems in tens of thousands of machines have not been corrected.

The NPS also seems to overlook a recent study by the University of Florida (UF) that found that PWC represent a greater threat to child safety than conventional boats. In this study, researchers reviewed the records of children seen at the UF hospital from 1992 to 2000 for boating related injuries and found that "jetski accidents tended to result in more serious injuries than those sustained in accidents with small boats." This research also found that 75 percent of all children injured on a jetski required operative interventions. By contrast, only 43 percent of the children injured in conventional boating accident required similar surgery.

The NPS 2001 management policies require the Park Service to provide park visitors "a safe and healthful environment." Permitting an activity at Glen Canyon which poses a direct threat to both children and the rest of the visiting public runs counter to both federal law and NPS administrative policy.

Supportable conclusions regarding the impact of PWC oil and gas pollution on Glen Canyon's resources and wildlife

In the DEIS's summary, the NPS states that continued PWC operation at Glen Canyon will have a long-term "negligible to minor" impact upon water quality. However, the NPS notes that most PWC gas and oil spills "volatize" into the atmosphere, are relatively small compared to the overall volume of water and do not threaten plant and animal health. Since the levels of pollutants in GCNRA do not appear to violate water quality standards, the NPS concludes that the preferred alternative, which authorizes continued PWC use, will result in no impairment of the lake's water resources.

However, the NPS appears to reach this conclusion despite the fact that it disregarded or overlooked relevant research, doesn't know the long term impact of some pollutants, based its decision on incorrect assumptions, and relied upon contradictory evidence.

For example, given the National Academy of Sciences' (NAS) recent report *Oil in the Sea III: Inputs, Fates, and Effects,* there seems to be little support for the NPS' conclusion that PWC pollution will have little impact upon Glen Canyon's water and biological resources. First, not all petroleum compounds evaporate into the atmosphere. As the NAS correctly notes, pollutants such as highly toxic polycyclic aromatic hydrocarbons (PAH) can remain suspended in the water column or deposited in sediment for years after initial deposition. Next, these researchers discovered that the size of an oil spill indicates little about its potential impact upon plant and animal life. They report that even minor, short-term spills can cause detrimental damage to aquatic wildlife's energetic and biosynthetic processes and immune systems, as well as their structural development and reproduction. Finally, the NAS report reveals that reliance upon state water quality standards may not be adequate to protect the lake's plants and wildlife. In fact, the NAS reports that exposure to hydrocarbon pollution can interfere with biological processes at "concentrations several orders of magnitude lower than concentrations that induce toxic effects." (For more on these impacts, please see enclosed sections of Chapter Five of the report.)

Next, we fail to understand how the NPS reached its water quality position when the NPS admits that it needs more information on the toxicity and long-term impact some pollutants. For example, on page 16, the NPS states that it lacks studies on the long-term impacts of polycyclic aromatic hydrocarbons (PAH) on various biota. Later, on page 355, the NPS states that it didn't incorporate the phototoxicity of PAH into its conclusions because it doesn't know the site-specific water transparency of the lake. This despite the fact that research at Lake Tahoe shows that PAH's toxicity increases dramatically when exposed to sunlight.

On page 83, the NPS appears to make the assumption that the NRA's water quality is good by the apparent visual clarity of the lake. However, despite the fact that the NPS stated in Appendix D that it doesn't have site-specific transparency data, water clarity is not a good indication of water quality. Tests at Canandaigua Lake in upstate New York proved this to be true. Water quality tests performed immediately after a PWC race found that concentrations of extremely toxic hydrocarbon pollutants in Canandaigua Lake rose dramatically to levels that violate public health standards. However, researchers found that even though the PWC race contaminated the lake with high levels of toxic compounds, it did so without impacting water clarity. This proves that an absence of visible slicks is not a good indication of water quality.

The NPS also seems to make mistakes when estimating the daily fuel load for Lake Powell. For example, on page 168 the NPS calculations contain the assumption that only a small residual concentration of the daily fuel load will carry over to the following day. Like other Park Service assumptions, this one is unsupported by available research. Studies out of Sweden found that pollutants in water used during marine engine tests remained at toxic levels for weeks after the tests' completion. Furthermore, researchers out of Alaska have found that PAHs deposited into sediment can remain at toxic levels for years. These studies clearly show that the NPS is underestimating the amount of gas and oil PWC dump into the lake that is carried over into the next day.

The NPS also fails to address the impacts of PWC water pollution on downriver environments such as those in Grand Canyon National Park. This is a serious oversight. As the NPS notes on page 16 of the DEIS, the *Oil in the Seas* report states that a significant portion of the petroleum in the world's ocean's comes from terrestrial sources such as PWC. Moreover, much of this terrestrial oil is transported to the sea through freshwater systems like lakes and rivers. As this oil moves downriver, it can have detrimental impacts upon water quality, endangered species, public health, and wildlife. Yet, despite the fact that oil dumped in Lake Powell will impact resources and wildlife downstream from the NRA, the NPS makes no mention of it in the DEIS.

On page 181, the NPS states that even though PWC exhaust is initially expelled in the water, "a portion" of the exhaust pollutants end up in the atmosphere. This conclusion leaves the impression with the reader that PWC do not have a significant impact upon Glen Canyon's air quality. However, in the water quality section of the affected environment chapter, the NPS states that a vast majority of PWC unburned hydrocarbon pollution, which can represent nearly a third of all emissions discharged from a typical two-stroke PWC, ends up in the air. In particular, the NPS notes that "about 85 percent of these [hydrocarbon] compounds are highly volatile." In other words, they evaporate into the air quite readily. These two statements contradict each other and appear to be an attempt to downplay the impact PWC have on both air and water quality. Clearly, both statements cannot be accurate. . Either a significant portion of PWC exhaust evaporates into the atmosphere and likely has a greater impact upon air quality than the NPS is reporting, Or a significant portion of the pollution remains in the water column and probably has a greater impact upon water quality than is reported in the DEIS.

Again, the NPS' failure to conduct a thorough and accurate analysis of PWC impacts appears to legally doom the draft EIS' usefulness as a PWC management document.

A complete accounting of the economic costs and benefits of PWC activity at Glen Canyon

On page 274 of the DEIS, the NPS states that alternative C, a PWC ban, would result in a loss of $25 to $42 million to the local economy. The NPS states this is due in part to the fact that hundreds of thousands of visitors will not return to the park. We believe the NPS' figure grossly inflates the economic impact of a PWC ban for it does not include several economic benefits that will result from the prohibition and assumes that park visitation will drop.

First, researchers have estimated that an individual PWC inflicts roughly $50 dollars worth of noise cost each day of operation. The NPS estimates that PWC at Lake Powell are in operation approximately 220,000 boat days per season. Multiplying the noise costs by the days of operation produces $11 million in noise costs at Lake Powell per year. Dividing this number in half to take into account the greater tolerance of boaters to boat noise results in $5.5 million in noise costs. If one adds PWC pollution costs (which have been estimated at $12 per day of operation), the overall cost of PWC operation upon natural soundscapes and air/water quality rises to more than $8 million. Besides overlooking the noise and pollution costs of PWC operation, there is also no discussion of the economic costs of continued PWC operation upon NRA's wildlife, public safety, and visitor use. Obviously, banning PWC eliminates these costs and result in significant economic benefits to the public. Moreover, elimination of these costs from alternative C would substantially reduce the economic impact of a PWC ban.

Next, the assumption that a PWC ban at Glen Canyon will automatically result in a decrease in park visitation is highly questionable. Rather, NPS data clearly shows that parks that ban PWC may actually see increases in visitation. From the most recent visitation data (January through August), the NPS reports that at the 13 parks that banned PWC on April 22, 2002, park visitation increased on average by 7 percent over 2001 counts. In fact, at Delaware Water Gap and Gateway, the two NRAs on the list, park visitation has actually increased by more than 10 percent as compared to last year. By contrast, from the same visitation data cited above, at the eight parks where PWC use has continued, park visitation is down 10 percent. At Glen Canyon, park visitation is also down 10 percent from last year. These numbers clearly shows that PWC bans do not automatically lead to reduced visitation.

Unfortunately, the NPS neglected to include the economic benefits of a PWC ban, as well as the fact that visitation may actually increase at the NRA in its analysis of alternative C. These oversights call into question the accuracy and thoroughness of the Park Service's economic analysis.

Conclusion

PWC are multiple impact machines. The overwhelming body of scientific research shows that these machines cause significant damage to air and water quality, visitor enjoyment, public health and safety, endangered species, natural soundscapes, and wildlife. The Park Service's draft PWC DEIS provides startling evidence of the derogating impacts these machines have on Glen Canyon's ecosystems. We formally request that the Park Service adopt the "no action" alternative and forego the creation of PWC special regulations.

Sincerely,

Sean Smith, M.S.
Public Lands Director

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Escalante Wilderness Project

[redacted]

November 26, 2002

Glen Canyon National Recreation Area
Attn: Personal Watercraft DEIS
P.O. Box 1507
Page AZ 86040

To Whom It May Concern:

The Escalante Wilderness Project supports Alternative C, the no action alternative, under which all personal watercraft use within the Glen Canyon NRA would be prohibited. Only Alternative C will protect the drinking water in Lake Powell from the pollution emitted by personal watercraft. Only Alternative C will solve the problem of noise pollution created by personal watercraft.

Please keep us on your mailing list for all NEPA documents regarding the Glen Canyon NRA.

Sincerely,

Victoria Woodard
Board member
Escalante Wilderness Project

LIVING RIVERS

GLCA-01174
page 1 of 4

November 27, 2002

Kitty Roberts
Superintendent
Glen Canyon National Recreation Area
Attn: PWC DEIS
P.O. Box 1507
Page, AZ 86040

Via Fax: 928-608-6212

RE: Comments on National Park Service's Draft Environmental Impact Statement and Personal Watercraft Rule-Making for Glen Canyon National Recreation Area

Dear Superintendent Roberts:

Living Rivers respectfully submits the following comments on the National Park Service's Draft Environmental Impact Statement (DEIS) and personal watercraft (PWC) rulemaking for Glen Canyon National Recreation Area (GCNRA).

PWC use is an extremely important issue facing the National Park Service, and GCNRA specifically. Unfortunately, while other Park Service units have addressed it as such, the DEIS reveals a cursory analysis by GCNRA, which lacks compliance with the National Environmental Policy Act (NEPA) process in an effort to justify a preferred alternative that does little to address the concerns which triggered this NEPA process.

1. No data to support conclusions relating to Alternative C.

Throughout the EIS there are references to Alternative C which state "by the end of the ten-year analysis period, most former personal watercraft users would have returned to the recreational area with other motorized watercraft." This unsubstantiated conclusion is used to support the supposition that implementing Alternative C would not significantly affect air quality, water quality, noise, visitor experience, etc. over the medium to long term. The DEIS contains no data or analysis to back-up this prediction. There is, however, data presented in the DEIS that indicates that the opposite can be anticipated, allowing for extensive and permanent reduction of impacts.

Although not stated, but clearly supported in the data presented in the DEIS, is that the overwhelming majority of PWC use at Lake Powell reservoir is associated with the use of other vessels, such as powerboats and/or houseboats. Only a small percentage of PWC users at Lake Powell reservoir employ PWCs as their primary vessel. On page 126 the DEIS states that 32 percent of groups visiting Lake Powell use PWCs, while 84 percent use powerboats and 29 percent use houseboats. It also states that 39 percent of the houseboat groups and 25 percent of the powerboat groups include at least one PWC. This means that 11 percent of the groups on the reservoir have houseboats and PWCs and another 21 percent of the powerboat groups have PWCs. Combined this represents 32 percent of the groups on Lake Powell reservoir—the same figure for PWC groups stated in the DEIS. Because some groups contain houseboats, powerboats

[redacted]

and PWCs, this calculation may yield a slightly exaggerated figure. However, the percentage of such three-craft groups is likely rather low, else it would have been included in the data presented in the DEIS. If, as the DEIS states, 32 percent of all groups employ PWCs, and 32 percent—minus some small amount—of all groups use PWCs with powerboats and/or houseboats, it is clear that PWC use is significantly tied to the use of these other watercraft.

Therefore, like waterskis, wakeboards and other recreational equipment, PWCs represent merely one form of recreation associated with the collective activities of groups using other vessels. Permanently banning PWC use does not necessarily mean that these powerboat and houseboat groups will utilize an additional vessel, merely that they will have one less recreational activity associated with their time on Lake Powell reservoir. While many of these users will continue to take part in motorized reservoir activities, there is no data or analysis presented for why these groups will necessarily incorporate additional watercraft to replace PWCs. Nor is there any evidence to suggest that there would be a one-to-one relationship over time to the replacement of PWCs lost with other vessels. Lastly, there is also no evidence to support that the small percentage of groups that only use PWCs will use the reservoir at all, given that their preferred activity is permanently banned.

Absent evidence to the contrary, it is clear that the analysis of Alternative C is significantly flawed, grossly misleading the public as to the actual social and environmental benefits associated with a permanent ban of PWCs on Lake Powell reservoir. A much more likely scenario is that any change in motorized use on the reservoir will occur at a pace consistent with current trends, absent the use of PWCs.

2. Alternatives A and B are arbitrary.

As illustrated in Table 18 on page 131 the areas proposed for PWC restriction in alternatives A & B constitutes low use areas on Lake Powell reservoir by PWCs. These proposals provide limited benefits to the visitor experience relative to more than 190 other side canyons that are to remain accessible to PWCs from Lake Powell reservoir. Such a limited selection is arbitrary and capricious. The fact that these areas may have had PWC restrictions associated with them in the past, should not render them the sole locations for the development of alternatives. Similar problems with noise and competing uses, which represent the primary justification for the presentation of Alternatives A & B, also occur at Navajo, Antelope, Moqui, Lake and many other side canyons inundated by Lake Powell reservoir. These areas must be given equal, if not greater consideration, in the analysis of alternatives, not be systematically ignored.

3. Insufficient justification for eliminating alternatives from further consideration.

Page 61 states that limiting PWC use to the main channel of Lake Powell reservoir would be, "...inconsistent to the objectives of the recreation area as defined in its enabling legislation. The objectives of the recreation area are to manage the area so that it provides maximum recreational enjoyment to the American public and its guests... ."

Limiting PWC use to the main channel in no way compromises a visitor's recreational enjoyment. PWCs are not primarily used for transportation to other recreational opportunities/locations on Lake Powell reservoir. As stated in the DEIS, PWCs are "high-performance vessels designed for speed and maneuverability and are often used for stunt-like maneuvers." So long as the Park Service provides for this opportunity at a reasonable number of locations, there would be no conflict with the spirit of the enabling legislation. Furthermore, as the user group analysis in Section 1 above illustrates, the vast majority of PWC users are accompanied by other vessels, therefore they can gain access to all other areas on the reservoir where other forms of power boating is allowed. Lastly, while PWCs may afford access to some areas too small for other vessels, such areas constitute the precise types of locations that generate substantial conflict with non-motorized users, and thus should warrant a ban on PWC access.

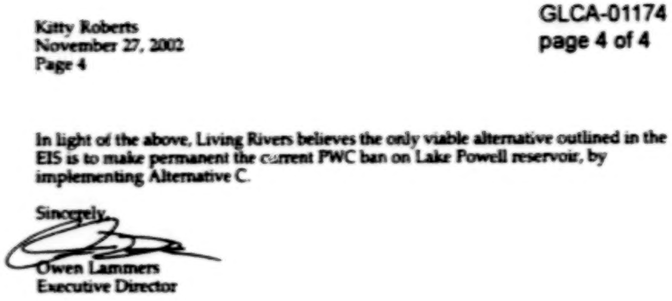
4. Only alternative C ensures compliance with federal law.

The National Park Service Organic Act states that Park resources are to be managed so that they remain "unimpaired for future generations." The allowances for PWCs into the GCNRA has indeed caused such impairment. The Park Service attempts to justify PWC use as consistent with GCNRA's enabling legislation. However, the 1972 enabling legislation was not able to predict the evolution of these vessels, and the profoundly negative impact they would have on these "future" generations. Unlike other forms of powerboating on Lake Powell reservoir, PWCs contribute significantly to water, air and noise pollution, and more specifically, to the derogation of the visitor experience throughout the reservoir. The 1978 Redwood Act states that there should be no "derogation" of Park resources, yet GCNRA has taken no steps to restrict this relatively new, and growing source of conflict for visitors to Lake Powell reservoir.

While the 1979 GCNRA General Management Plan's mission may be to "...provide maximal recreational enjoyment to the American public and their guests..." this does not allow for one form of recreation to increasingly detract from others. Maximal enjoyment must allow for a threshold, particularly in light of increasing demands for non-motorized activities in the reservoir's many side canyons. GCNRA may encompass more than 1.2 million acres, but the side canyons and tributaries feeding the reservoir's mainstem are amongst its most spectacular assets and must be managed accordingly. Only Alternative C provides for the management requirements consistent with federal law, and therefore should become the preferred alternative.

5. Lake Management Plan

The DEIS states that within Alternatives B & C that GCNRA will "seek funding for the development of a Lake Management Plan." This should be a component of all alternatives. Moreover, the term "seek funding for" does not provide sufficient assurances that such funding will ever be obtained. GCNRA should make the development of a Lake Management Plan a priority, and commit to getting it done, not merely alluding to it pending the outcome of uncertain resource allocation decisions. Additionally, such a plan must explore placing similar restrictions on powerboats and houseboats as those being contemplated for PWCs.



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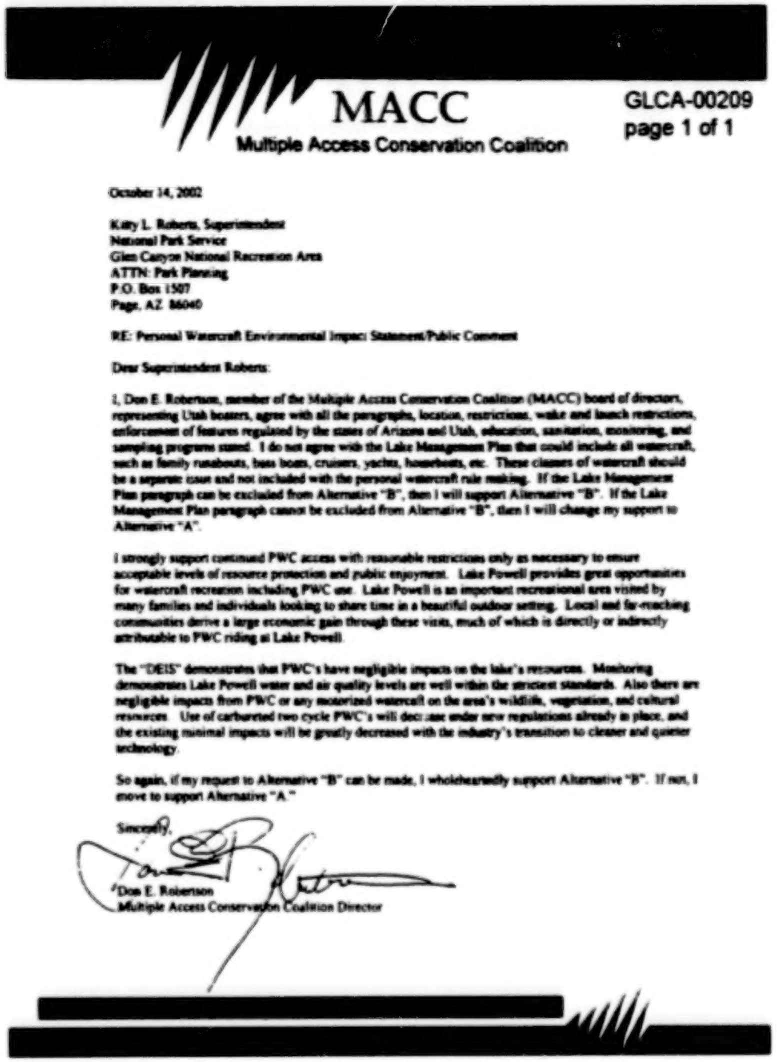
Kitty Roberts
November 27, 2002
Page 4

In light of the above, Living Rivers believes the only viable alternative outlined in the EIS is to make permanent the current PWC ban on Lake Powell reservoir, by implementing Alternative C.

Sincerely,

Owen Lammers
Executive Director



MACC
Multiple Access Conservation Coalition

GLCA-00209
page 1 of 1

October 14, 2002

Kitty L. Roberts, Superintendent
National Park Service
Glen Canyon National Recreation Area
ATTN: Park Planning
P.O. Box 1507
Page, AZ 86040

RE: Personal Watercraft Environmental Impact Statement/Public Comment

Dear Superintendent Roberts:

I, Don E. Robertson, member of the Multiple Access Conservation Coalition (MACC) board of directors, representing Utah boaters, agree with all the paragraphs, location, restrictions, wake and launch restrictions, enforcement of features regulated by the states of Arizona and Utah, education, sanitation, monitoring, and sampling programs stated. I do not agree with the Lake Management Plan that could include all watercraft, such as family runabouts, bass boats, cruisers, yachts, houseboats, etc. These classes of watercraft should be a separate issue and not included with the personal watercraft rule making. If the Lake Management Plan paragraph can be excluded from Alternative "B", then I will support Alternative "B". If the Lake Management Plan paragraph cannot be excluded from Alternative "B", then I will change my support to Alternative "A".

I strongly support continued PWC access with reasonable restrictions only as necessary to ensure acceptable levels of resource protection and public enjoyment. Lake Powell provides great opportunities for watercraft recreation including PWC use. Lake Powell is an important recreational area visited by many families and individuals looking to share time in a beautiful outdoor setting. Local and far-reaching communities derive a large economic gain through these visits, much of which is directly or indirectly attributable to PWC riding at Lake Powell.

The "DEIS" demonstrates that PWC's have negligible impacts on the lake's resources. Monitoring demonstrates Lake Powell water and air quality levels are well within the strictest standards. Also there are negligible impacts from PWC or any motorized watercraft on the area's wildlife, vegetation, and cultural resources. Use of carbureted two cycle PWC's will decrease under new regulations already in place, and the existing minimal impacts will be greatly decreased with the industry's transition to cleaner and quieter technology.

So again, if my request to Alternative "B" can be made, I wholeheartedly support Alternative "B". If not, I move to support Alternative "A."

Sincerely,

Don E. Robertson
Multiple Access Conservation Coalition Director

NMMA
National Marine Manufacturers Association
[redacted]

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November 26, 2002

BY FEDERAL EXPRESS

Ms. Kitty Roberts
Superintendent
GLEN CANYON NATIONAL RECREATION AREA
PWC DEIS
691 Scenic View Drive
Page, AZ 86040

Re: Comments to Glen Canyon National Recreation Area's Personal Watercraft Draft Environmental Impact Statement - *Federal Register* (Sept. 27, 2002)

Dear Ms. Roberts:

These comments are submitted on behalf of the National Marine Manufacturers Association ("NMMA"). NMMA represents more than 1400 manufacturers of recreational boats, engines and boating accessories. Its member companies produce over 80 percent of the marine products used by 75 million recreational boaters throughout the United States. NMMA is vitally interested in ensuring that personal watercraft ("PWC") use continues, on fair and nondiscriminatory terms, in units of the National Park System where all other forms of motorized recreational boating are permitted.

The Glen Canyon NRA's primary management objective is to manage Lake Powell and its surrounding lands for the "maximal recreational enjoyment to the American public and their guests." *Draft Environmental Impact Statement for Personal Watercraft Rulemaking ("DEIS") at 3.* NMMA believes that PWC use should be part of the allowable activities on Lake Powell, and as such generally supports Alternative B, the environmentally preferred alternative. NMMA supports continued operation of ***all*** motorized vessels in the majority of the Glen Canyon NRA.

The Glen Canyon NRA is a major recreational boating resource for northern Arizona and southeastern Utah. It is "one of the premier water-based recreation areas in the country." *DEIS at 125.* Recreational boating has been prevalent on Lake Powell since its enabling legislation was enacted in 1972. Visitors enjoy all types of watersports - motorized boating, water-skiing, sailing, houseboating, tour boating, canoeing, kayaking, personal watercraft - on Lake Powell. PWCs accounted for approximately 26% percent of all "boat days" in 2001, ranging from a high of 38% of "boat days" in September to a low of 5% of "boat days" in November. *DEIS at 126.*

Executive Committee [illegible]

Together, making boating the #1 choice in recreation.

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All forms of boating have some impact on the environment. NMMA recognizes that for various reasons, there are some areas that are inappropriate for any motorized boating, whether they are fishing boats, PWC or family runabouts. When used responsibly and within the limits of the law, personal watercraft have not been shown to have a greater impact on the environment than any other form of motorized recreational boating.

NMMA strongly advocates that any regulation adopted by the NPS should be uniformly applied to all motorized recreational vessels. NMMA believes that all motor boaters should be equitably treated. All tax and fee paying, law-abiding, responsible boaters should be able to enjoy access to this nation's public waterways, without regard to their boats hull type. Singling out personal watercraft at the behest of various PWC opponents arbitrarily disenfranchises an entire segment of the boating community from enjoying the waterways.

The lake management plan should be developed to reduce conflicts between all users of the public waterways, focusing on reasonable regulation and strict law enforcement on the waterways. NMMA fervently opposes any attempts to target particular types of boats for overly severe restrictions or outright bans. Thus, PWC should not be made to operate at wakeless speed on certain segments of the Dirty Devil and Escalante Rivers while other motorized boats could operate at normal speed in the same area. *DEIS at 55-56.* Such an approach is not effective public policy; but rather a form of discrimination against one type of vessel over another.

The proposed no-wake speed restrictions on the Dirty Devil and Escalante Rivers would also pose substantial safety hazards to all boaters, including PWC operators and passengers. Restricting only PWC to no-wake speeds presents a safety hazard if other vessels are permitted to operate at significantly faster speeds. NMMA encourages the NPS to adopt uniform application of no-wake zones to all motorized vessels as recommended by the National Association of State Boating Law Administrators (NASBLA) if it finds that speed restrictions are needed in the Glen Canyon NRA.

NMMA also strongly supports mandatory boater education and strict enforcement of navigation and safety regulations in every state. Arizona and Utah state law already provide strong regulations regarding the safe operation of motorized vessels, including personal watercraft. Continued strict enforcement of these state boating laws will help to assure safe boating experiences for all visitors to the Glen Canyon NRA. NMMA encourages the NPS to work with the states of Arizona and Utah to develop unified laws for the operation of all motorized vessels in the Glen Canyon NRA should it feel uniformity of the state boating laws is necessary to reduce visitor conflict.

Safe and responsible use of our natural resources and a respect for wildlife is a priority for the recreational boating industry. Since 1998, PWC manufacturers have made

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tremendous advances in engine and sound technologies. The PWC manufacturers have invested over $1 billion to improve their products, achieving a 75% reduction in emissions, and a 70% reduction in sound pressure.

NMMA applauds the NPS and Glen Canyon NRA for their balanced approach to this EIS and rulemaking. NMMA is vitally interested in ensuring that our nation's waterways are a vital recreational resource for the entire boating community. As such, NMMA encourages the NPS to resist pressure from special interest, anti-motorized recreation groups who seek to restrict access to certain types of boaters and prevent them from enjoying the public waters. Through reasonable regulation, mandatory education, and adequate law enforcement, all visitors to our national parks can be afforded the greatest measure of safety and enjoyment while they recreate.

In conclusion, NMMA is always ready to assist public land managers and regulators in any way possible. If we can ever be of any assistance, please do not hesitate to contact us. Thank you for your time and consideration.

Sincerely,

Kelly Bobek

Kelly Bobek
Director, Federal Government Relations

If there is anything that the NMMA can ever
do for Glen Canyon NRA, or the NPS, please do not hesitate to contact
me.

GLCA-01248
page 1 of 3

From: Steven Bosak [redacted]
Sent: Wednesday, November 27, 2002 9:50 PM
To: GLCA@den.nps.gov
Cc: GLCA_Superintendent@nps.gov
Subject: NPCA's comments on PWC EIS for GLCA

Dear Superintendent Roberts:

Please accept the attached comments (also pasted below) as the National Parks Conservation Association's comment on Glen Canyon NRA's EIS for its PWC rulemaking. I am e-mailing copies to the Denver address as well as the park address to ensure receipt.

Regards,

Steven

November 27, 2002

Superintendent Kitty L. Roberts
Glen Canyon National Recreation Area
National Park Service
PO Box 1507
Page, AZ 86040

RE: Comments on EIS for Personal Watercraft Rulemaking

Dear Superintendent Roberts:

The National Parks Conservation Association appreciates this opportunity to comment on the National Park Service's Environmental Impact Statement for the Personal Watercraft (PWC) Rulemaking for Glen Canyon National Recreation Area and requests that this letter be included in the public record.

The National Parks Conservation Association (NPCA) is the nation's only national non-profit organization solely dedicated to the protection and enhancement of the National Park System. Our members visit national park units to experience and enjoy the scenery, wildlife, and other resources such as natural sounds and solitude preserved within the National Park System.

Our recommendation
NPCA opposes the use of personal watercraft (PWC) in units of the National Park System. We believe the Glen Canyon National Recreation Area should adopt the no-action alternative (C) and make the temporary ban on PWC at this unit a permanent one. We strongly endorse the development of a Lake Management Plan under this alternative.

NPCA does not feel the PWC EIS demonstrates that PWC use would not cause harm to Glen Canyon NRA's resources, values, and visitors. Furthermore, the EIS indicates plainly that alternative C would provide the greatest benefits to visitor safety by reducing the amount of injuries to visitors, and, in the short term, reducing the amount of accidents on the water. A PWC ban would surely benefit other visitors to the area - those in motorized and non-motorized boats and those on shore - who go to Glen Canyon in search of peace and quiet and the natural sounds and solitude that can be found in many of the reaches of Lake Powell.

Why PWC are inappropriate in national park units

The National Park Service must administer every unit of the National Park System in accordance with the Organic Act of 1916. Glen Canyon NRA's enabling legislation makes specific reference to this act, which states that the Park Service must manage park units

"?to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

Glen Canyon's enabling legislation also notes that the area was established to

"?provide for public outdoor recreation use and enjoyment of Lake Powell and lands adjacent thereto in the States of Arizona and Utah and to preserve the scenic, scientific, and historic features contributing to public enjoyment of the area?(PL 92-593)."

The natural soundscape, the aquatic environment, and the solitude of many of Lake Powell's canyons are critical components of the scenic, scientific, and historic features that NPS must protect.

Glen Canyon NRA's 1979 General Management Plan does state that the recreation's primary management objective is to "[provide] maximal recreational enjoyment to the American public and their guests." NPS laws and policies - and substantial case law - however, make clear that managers must not permit any recreational activities that derogate the values embodied in, and the purpose defined by, the Organic Act. If the Park Service is to succeed in its mission to preserve parks 'unimpaired for future generations," it must be vigilant - more vigilant than it has been in the past - about preventing inappropriate recreation to gain a foothold in park units.

The Park Service's own Management Policies tell managers that they "?must always seek ways to avoid, or to minimize to the greatest degree practicable, adverse impacts on park resources and values. (NPS Management Policies at 1.4.3)." Through its original system-wide PWC rulemaking, the National Park Service acknowledged that PWC cause resource degradation and disturb other visitors.

PWC are designed and built as high-performance thrill craft. While the PWC industry has improved the engines on many of its new models, these craft still have a very high power to weight ratio and poor safety records. Many of the PWC still in use emit high amounts of fuel and oil into the water. The characteristics of the noise created by the PWC is known to be much more disturbing to other water recreationists than the noise created by other motorized water vessels. In fact, PWC are fundamentally different from most other motorized boats used in national park units: Their acceleration, high speed, and maneuverability make them akin to dirt bikes on the water. The "thrill" aspect of this craft is often reinforced by the way in which the PWC markets their wares:
"Thumb your Throttle at the World" is one example of a tagline for a PWC advertisement.

For these reasons, NPCA feels the Park Service should adopt alternative C and proceed with the development of a Lake Management Plan so that it can better understand and manage other impacts to Glen Canyon's resources and values.

Considerations if alternative B is adopted

While we oppose PWC use in national park units, we recognize that the Park Service has allowed PWC use to flourish in many of the national recreation areas in the National Park System and appears reluctant to end that use. (The exceptions are Whiskeytown NRA in northern California and Delaware Water Gap NRA in Pennsylvania and New Jersey where park managers decided to ban PWC use because managers found PWC use was an inappropriate form of recreation in those units.) In fact, many NRAs do allow an abundance of motorized water recreation. Oddly enough, NPS seems concerned with ensuring that visitors have a wide range of activities available to them. Under the current management regime though, it appears that non-motorized water recreationists have few places to go where they can enjoy the natural quiet and solitude of the Recreation Area without the disturbance of motorized vessels.
Motorized recreation is the dominant activity on the lake.

NPCA feels that while advocating the prohibition of PWC in the Park System, we must acknowledge that NPS may allow that use to continue in some areas. We will therefore make a few recommendations on how alternative B could be modified to place stricter controls on PWC use.

If the Park Service chooses to enact its preferred alternative, B, NPCA recommends that it modify B to create more areas of the park that are off-limits to PWC use. Specifically, if NPS chooses alternative B, we recommend NPS prohibit PWC operation within a quarter mile of any shoreline. This buffer zone protects people recreating on and along the shorelines from PWC noise and potential PWC safety hazards; it also protects PWC users from potential collisions with near-shore submerged hazards. In any canyon where the width from shore to shore is less than a half mile, it would be impossible for PWC to operate more than a quarter mile from both sides of the canyon at once. Therefore, NPCA suggests that NPS modify alternative B to prohibit PWC use in any of the canyons of Lake Powell or tributary rivers where the shore-to-shore (or canyon wall-to-canyon wall) distance is less than one half mile. Glen Canyon has more than 90 side canyons. By prohibiting PWC use in the narrower canyons, the visitors who seek to enjoy natural quiet and solitude - including users of other motorized boats who moor and raft in these areas to enjoy the solitude -- would have some areas besides the canyons of the major tributary rivers to enjoy those features

GLCA-01286
page 1 of 1

From: Lee E Howard [redacted]
Sent: Monday, November 25, 2002 3:32 PM
To: GLCA@den.nps.gov
Subject: Personal Watercraft rule-making

I attended the Salt Lake informational session and came to the following conclusion about personal watercraft on Lake Powell and other recreational waters.

We were given thre options A.B.C.

I have chosen plan A to comment on because it is in line with the ideals of the 700 members that I represent, as President of the Foundation for North American Wild Sheep- Utah Chapter. Plan A is our choice

In the discussions of water quality and air pollution I feel that your surveys were done improperly with tests done on high volume days and not averaged over a period of time. one other fact is that most house boats have two outboard engines per house boat and that seems to be a small factor in your survey. All Boats-House boats-Personal Watercrafe must be included in your study accordint to there numbers. I don't feel that all these factors were done in a equtable manner. I feel that this this plan was done in haste to cover the Mis-Management of the Glen Canyon Recreation Area. Your lack of funding is no excuse to prolong a study of this magnitude.

Lee E. Howard

GLCA-01191
page 1 of 1

Page - Lake Powell
Chamber of Commerce
& Visitor Bureau

November 9, 2002

Glen Canyon National Recreation Area
Attn: Joan Mayer
Personal Watercraft - EIS
PO Box 1507
Page, Arizona 86040

Ms. Mayer:

The Page Lake Powell Chamber of Commerce would prefer Alternative A - no changes, but we believe there should be options for those people who would like to see PWCs outlawed entirely. "Quiet options" so support Alternative B.

PWC rental, sales and repair is an active partner in the economy of Page. A sizeable number of employees work this industry during the season, some college and school people earning monies, while others work throughout the year supporting their families. The taxes generated are important to the state, county and city. Federal monies and NPS operating fees are generated through the entry fees to the Recreational area. Were PWCs banned or severely limited there would be an immediate impact.

We appreciate the hard work being put into this project and urge "all speed ahead" so we can be back in business this rapidly coming spring of 2003!

Joan Nevills-Staveley
Executive Director

PAGE LAKE POWELL CHAMBER OF COMMERCE

cc: Chamber Board
Blue Ribbon Coalition

Page - Lake Powell ... A Place For All Seasons
644 North Navajo Drive, Dam Plaza • P.O. Box 727 • Page, Arizona 86040
(928) 645-2741 • Fax (928) 645-3181 Visitor Info: 1-888-261-PAGE (7243)
www.pagelakepowellchamber.org • E-mail: info@pagelakepowellchamber.org

November 22, 2002

BY FEDERAL EXPRESS

Ms. Kitty Roberts
Superintendent
GLEN CANYON NATIONAL RECREATION AREA
PWC DEIS
691 Scenic View Drive
Page, AZ 86040

Re: Comments to Glen Canyon National Recreation Area's Personal Watercraft Draft Environmental Impact Statement - 67 *Fed. Reg.* 61,089 (Sept. 27, 2002)

Dear Ms. Roberts:

These joint comments are submitted on behalf of the Personal Watercraft Industry Association ("PWIA") and its member companies, American Honda Motor Co., Inc., Bombardier Motor Corporation of America, Kawasaki Motors Corp., U.S.A., Polaris Industries Inc., and Yamaha Motor Corporation, U.S.A. (collectively, the "PWC Companies"), in response to the Glen Canyon National Recreation Area's ("Glen Canyon NRA") Draft Environmental Impact Statement for Personal Watercraft Rulemaking ("DEIS"). The PWC Companies are manufacturers and/or distributors of personal watercraft ("PWC"). The PWIA and the PWC Companies are vitally interested in ensuring that PWC use continues, on fair and nondiscriminatory terms, in units of the National Park System where other forms of motorized recreational boating are permitted.

I. Introduction

The DEIS evaluates three alternatives relating to PWC use in the Glen Canyon NRA. Alternative A would continue PWC use as it is currently managed under a special regulation. Alternative B would continue PWC use under a special regulation, but with additional specific restrictions. A no-action alternative was also considered, under which further PWC use would be prohibited entirely. The DEIS indicates that the short- and long-term environmental impacts of all three alternatives are essentially the same, and that neither Alternative A nor B would impair resources within the Glen Canyon NRA.

The DEIS identifies Alternative B as the environmentally preferred alternative that best fulfills the responsibilities of the National Park Service ("NPS") in managing the park's resources. DEIS at xi-xii. Alternative B would allow PWC use on Lake Powell but close the majority of all four rivers (Dirty Devil, Escalante, San Juan, and Colorado) for both upstream

and downstream use. Additional wake restrictions would be imposed in large areas of the Dirty Devil and Escalante Rivers. *Id.* at xi. NPS management would also develop enhanced educational programs and materials on personal watercraft regulations and safe operating procedures, and conduct a three-year pilot study to identify effective techniques in further reducing any visitor conflicts. *Id.*

The PWIA and the PWC Companies generally support Alternative B, with some important suggested modifications and clarifications that are discussed below. This alternative appears to represent a reasonable approach to managing various visitor uses and recreational opportunities, as provided in the park's enabling legislation, while providing long-term protection of the natural and cultural resources of the Glen Canyon NRA.

The PWC Companies and PWIA are gratified that, as a result of this searching examination of all aspects of PWC use, the DEIS supports continued operation of the vessels in the majority of the Glen Canyon NRA. The DEIS is based on relatively current, objective information and data about PWC, and generally provides the basis for sound rulemaking that was lacking when the NPS promulgated its original system-wide ban of PWC use. *See* 36 C.F.R. pts. 1, 3 (proposed Sept. 15, 1998); Joint Comments of Personal Watercraft Manufacturers (submitted Nov. 16, 1998).

II. Summary Of Comments

These joint comments of the PWC Companies and the PWIA provide the most recent and accurate information about PWC usage and emissions available. This includes a quantitative analysis of PWC engine family emission estimates and the resulting impacts in the Glen Canyon NRA, based on certified data and confidential sales information that each PWC company has submitted individually to the United States Environmental Protection Agency ("EPA") for model years 1999 to 2003. These emissions data demonstrate that the qualitative analysis and assumptions made in the DEIS about continued PWC use in the park are based on outdated information and *overstate* the existing and long-term impacts of PWC. Indeed, the data show that PWC emissions in the Glen Canyon NRA have already been reduced by nearly 25%, and will be reduced by approximately 80% in 2012. The emissions data provide important additional evidence that continued PWC use will not impair resources within the Glen Canyon NRA.

In addition, the joint comments rebut several mischaracterizations of the vessels and their usage, and identify aspects of the preferred Alternative B that should be modified or clarified. There is no environmental or other reason to close certain river areas within the park to PWC but not to other forms of motorized vessels. Moreover, imposing new wakeless speed restrictions only on PWC and not on other motorized vessels would create serious safety hazards for all boaters. The United States Coast Guard ("Coast Guard") and the National Association of State Boating Law Administrators ("NASBLA") have identified the hazards posed by PWC-specific no-wake restrictions and have recommended that any speed and proximity restrictions should be applicable to all vessels. Any additional proposed wakeless zones in the Glen Canyon NRA should apply to all motorized boats, not just PWC.

III. Background

The Glen Canyon NRA encompasses 1,254,306 acres of land and water in northern Arizona and southeastern Utah. Its southern boundary is contiguous with the Navajo Nation. Other boundaries adjoin Grand Canyon National Park, Capitol Reef National Park, Canyonlands National Park, and Rainbow Bridge National Monument, all managed by the NPS. DEIS at v. Visitors enjoy boating, water-skiing, and other watersports, along with camping opportunities ranging from remote and underdeveloped campsites to fully developed campgrounds. *Id.* at 125. Various archeological and culturally important sites can be visited throughout the recreation area. *Id.*

Lake Powell, the second largest man-made lake in North America, is the predominant physical feature in the Glen Canyon NRA. *Id.* at vi. Lake Powell has a surface area of 163,000 acres and more than 1,960 miles of shoreline. *Id.* at v.

A. Establishment And Purpose Of The Glen Canyon NRA

The Glen Canyon NRA was established in 1972 specifically "to provide for public outdoor recreation use and enjoyment of Lake Powell and lands adjacent thereto . . . and to preserve scenic, scientific, and historic features contributing to public enjoyment of the area." 16 U.S.C. § 460dd. The recreation area's primary management objective, as established in the general management plan (NPS 1979a), is "to manage the recreation area so that it provides maximal recreational enjoyment to the American public and their guests." DEIS at 3. The legislation goes on to state that the Secretary "shall administer, protect, and develop the recreation area" in accordance with the National Park System's Organic Act and any other available statutory authorities to the extent that it will further the purposes of the establishment legislation. 16 U.S.C. § 460dd-3.

B. Development Of The Glen Canyon NRA As The Preeminent Regional Site For Motorized Recreational Boating Activity

The Glen Canyon NRA has served as a major recreational boating resource for northern Arizona and southeastern Utah and also as "one of the premier water-based recreation areas in the country." DEIS at 3, 125. More than 2 million people visit the Glen Canyon NRA annually. *Id.* at 3. Boating activity has been prevalent on Lake Powell since its formation. The DEIS reports that PWC use on Lake Powell began in the 1980s but has been banned since November 6, 2002. *Id.* at 17-18. The NPS does not project any increase in PWC use in the next 10 years at the Glen Canyon NRA. *Id.* at 18.

C. Issuance And Implementation Of NPS System-Wide PWC Regulation

In March 2000, NPS issued a final rule governing personal watercraft use within the National Park System. 65 *Fed. Reg.* 15,077 (Mar. 21, 2000) (codified at 36 C.F.R. § 3.24). As a general matter, the rule prohibited PWC use in Park System units unless NPS determines that such use is appropriate for a specific area. The rule allowed PWC use to continue for a two-year grace period in 21 identified Park System units with current PWC use based upon a preliminary review of each unit's enabling legislation, resources, values, other visitor uses and overall management objectives. *Id.* at 15,078.

The rule divided these 21 units into two groups. The first group encompassed 10 designated areas, including the Glen Canyon NRA, whose enabling legislation specified water-related recreation as a primary purpose for the area and which were characterized by substantial motorized use. *Id.* at 15,078-79. Nine of these park areas contain man-made lakes (like Lake Powell) created by the construction of dams. NPS explained further in the preamble to the final rule that visitors to all 10 of these areas appear generally to expect and accept a variety of motorized boating, including PWCs. *Id.* at 15,079. Under the final rule, PWC use could be continued in these areas after the two-year grace period through either a compendium decision by the Park Superintendent or the adoption of a special regulation. The second group contained 11 Park System units including seven national seashores and two national lakeshores. In these areas, PWC use could be authorized to continue after the two-year grace period only through the adoption of a special regulation.

While NPS characterized its final rule as taking a "conservative approach" to authorizing PWC use in areas of the National Park System, the preamble specifically acknowledged that continued PWC use was appropriate in certain park units:

> PWC use appears to be appropriate in certain park areas. It is clear that Congress intended the NPS to manage an active motorized water-based recreation program on the large man-made lakes of Lake Mead and Glen Canyon National Recreation Areas and it seems appropriate for PWC use to be part of that recreation program. The final rule designates park areas where PWC use would be allowed.

Id. at 15,079-80. The preamble of the final PWC rule itself thus explicitly recognized that it was appropriate for PWC use to continue as part of the general recreation program in the Glen Canyon NRA.

In August 2000, Bluewater Network brought suit challenging the final PWC regulations. *Bluewater Network v. Stanton*, No. 00-CV-2093 (GK) (D.D.C. 2000). Subsequently, Bluewater Network and NPS entered into a settlement agreement which had the effect of changing the procedures for authorizing continued PWC use in certain park units. In particular, NPS agreed under the settlement to authorize continued PWC use in the initial category of ten park units, including the Glen Canyon NRA, only through the issuance of special regulations, not Superintendent Compendium decisions. In addition, the settlement extended the end of the grace period for PWC use in eight of these units, including the Glen Canyon NRA, from April 15, 2002 to September 15, 2002. In the settlement, NPS also acknowledged that it would comply with the requirements of the National Environmental Policy Act ("NEPA") in conjunction with issuing park-specific regulations to continue PWC use. The settlement further acknowledged that an appropriate NEPA analysis of such action would evaluate impacts on water quality, air quality, soundscapes, wildlife, wildlife habitat, shoreline vegetation, visitor conflicts, and visitor safety.

In September 2002, NPS and Bluewater Network entered into a stipulated modification to the settlement agreement which further extended the end of the grace period from September 15 to November 6, 2002 in seven of the national recreation areas, including the Glen Canyon NRA. PWC use is currently prohibited in the park unit.

D. NPS Policy Governing Continued PWC Use In Park Units

NPS updated and reissued its management policies for the National Park System in 2001 ("2001 NPS Policies"). The policy compilation includes a section specifically noting, in accordance with the final PWC regulation, that motorized PWC use is prohibited unless it has been identified as appropriate for a specific park. 2001 NPS Policies § 8.2.3.3. The policy compilation goes on to state that PWC use may be authorized if an evaluation of the park's enabling legislation, resources and values, other visitor uses, and overall management objectives confirms that PWC use is appropriate and consistent with the criteria governing visitor use and enjoyment of park resources generally. *Id.*

The NPS' general visitor use policy is to encourage activities that (1) are appropriate to the purpose for which the park was established; (2) are appropriate to the park environment; (3) will foster an understanding of park resources and values, or will promote enjoyment through interaction with park resources; and (4) can be sustained without causing unacceptable impacts to park resources or values. *Id.* § 8.2. NPS policy makes clear that the fact a use may have an impact does not necessarily mean it will "impair" park resources or values. Impacts may affect park resources or values and still be within the limits of the discretionary authority of NPS to allow under the Organic Act of 1916. *Id.* § 8.1.

NPS indicates that in exercising this discretion it will not allow visitors to conduct activities that (1) would "impair" park resources or values; (2) create an unsafe or unhealthful environment for other visitors; or (3) unreasonably interfere with other existing appropriate park uses. *Id.* § 8.2. The policy compilation goes on to list boating first among a number of examples of recreational activities that may be encouraged or allowed in park units. *Id.* § 8.2.2.

Under the 2001 NPS Management Policies, whether the impact of a particular activity rises to the level of an "impairment" of park resources depends on whether the impact would harm the integrity of park resources or values, including the opportunities that would otherwise be present for the enjoyment of those resources or values. *Id.* § 1.4.5. The policy explains that whether an impact meets the definition of impairment "depends on the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts." *Id.*

E. Authorization For Continued PWC Use In The Glen Canyon NRA

The enabling legislation for the Glen Canyon NRA makes clear that the area was established for the general purpose of public recreation, including boating. Motorized boating has been a feature in Lake Powell since the enabling legislation was enacted. PWC use began at the recreation area in the late 1980s. DEIS at 17-18. PWCs accounted for approximately 26% percent of all "boat days" in 2001, ranging from a high of 38% of "boat days" in September to a low of 5% of "boat days" in November through March. *Id.* at 126.

The 2001 NPS Policies make clear that the Park Service has management discretion to allow impacts on park resources and values when necessary and appropriate to fulfill the purposes of a park as long as the impact does not constitute "impairment" to the affected resources and values. 2001 NPS Policies § 1.4.3. As noted above, one of the Park Service's specific planning objectives for the Glen Canyon NRA is to continue to provide a wide variety of water-oriented recreational opportunities. DEIS at 12-13.

The PWIA and the PWC Companies urge NPS to proceed expeditiously in adopting a final special regulation permitting continued PWC use in the Glen Canyon NRA along the lines proposed in Alternative B. The record materials and environmental analysis developed by NPS, along with the additional data and information provided in these joint comments, fully supports the granting of authorization for continued PWC use in the recreation area.

IV. Continued PWC Use Will Not Impair Resources In The Glen Canyon NRA.

The DEIS contains a comprehensive analysis of every significant aspect of PWC use and its potential short- and long-term consequences for the environmental, cultural, and socioeconomic resources of the Glen Canyon NRA. The PWC Companies have developed additional data and information that fully support the findings of the NPS and further demonstrate that continued PWC use in the park will not impair any of these resources.

A. Air Quality: PWC Emissions Have Already Been Substantially Reduced In The Glen Canyon NRA And Pose No Public Health Risks Under Even The Most Extreme Operating Assumptions.

PWC and other marine engine emissions are subject to regulation by the EPA and the California Air Resources Board ("CARB"). PWC emissions have been rapidly declining in recent years, largely due to EPA standards that took effect beginning in 1999 and CARB standards that became effective with the 2001 model year. Under the EPA standards, PWC emissions for 93 kW engines must be reduced from a baseline of approximately 150 g/kW-hr in the 1998 model year to 46.1 g/kW-hr in the 2006 model year. This constitutes approximately a seventy percent (70%) reduction. The CARB standards are three-tiered, and require 93 kW engines to comply with (a) the 46.1 g/kW-hr level by the 2001 model year; (b) a 36.9 g/kW-hr level in 2004; and (c) a 16.1 g/kW-hr level in 2008. This constitutes approximately a ninety percent (90%) reduction.

In order to meet these standards, the PWC Companies have been rapidly converting from carbureted two-stroke engine models to new technology two-stroke[1] and four-stroke engine models. It is expected that, because of manufacturing and distribution efficiencies, most PWC units will meet the more stringent CARB standards over time.

The PWC Companies retained Sierra Research, Inc. ("Sierra Research"), a leading air pollution control consulting firm located in Sacramento, California, to help identify and document the reduction in PWC emissions being achieved by the industry and the resulting

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[1] The new technology two-stroke PWC include direct injection and electronic fuel injection, catalyst-equipped models that meet or exceed the 2006 EPA emissions reductions requirements.

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impacts on the Glen Canyon NRA. General information about Sierra Research is annexed as Exhibit 1.

Each PWC Company supplied Sierra Research with comprehensive emissions data by PWC engine family for model years 1999 to 2003. These data are regularly submitted, on a certified basis, to EPA and are publicly available from the agency. *See* <www.epa.gov/omswww/certdata.htm>. Each PWC Company also supplied Sierra Research with confidential production and sales data and forecasts that are also regularly submitted to EPA but are not publicly available.

Based on these data, Sierra Research estimated the average daily emissions of hydrocarbons ("HC") and oxides of nitrogen ("NOx") from PWC operating in the Glen Canyon NRA during the boating season ("PWC emissions"). Sierra Research also conducted a theoretical air quality modeling of possible "worst-case" exposure levels to carbon monoxide ("CO") and polycyclic aromatic hydrocarbon ("PAH") compounds that could occur in the recreation area during periods of peak PWC use. These analyses are annexed as Exhibit 2 ("Sierra Report"). The Sierra Report provides the most current and accurate information available about existing and projected PWC emissions through 2020.

As the Sierra Report documents, the HC + NOx emissions from PWC operating in the Glen Canyon NRA during the boating season are less than 5% of total emissions for the Glen Canyon NRA and the surrounding counties. Moreover, in 2002, emissions from the existing fleet of PWC were *already* 23% lower than they were before the EPA regulations became effective. As PWC certified to meet the CARB emissions standards continue to replace older vessels powered by carbureted, two-stroke engines, the PWC emissions rate will be reduced approximately 80% by 2012. Assuming that emissions from other sources in the area remain constant and the level of PWC activity remains the same as estimated by NPS, the PWC emissions on a peak day at the Glen Canyon NRA will be less than 2% of total emissions in the Glen Canyon NRA and the surrounding counties by 2012.

The emissions projections prepared by Sierra Research demonstrate a much more rapid decline in PWC emissions than assumed in the DEIS. The Sierra Research projections are based on certified emissions and sales data supplied by the PWC Companies to EPA, and account for the fact that by the 2006 model year, approximately 50% of all new PWC sales are expected to be CARB-certified, due to the manufacturing and distribution efficiencies associated with producing the same models for sale in all 50 states. The DEIS erroneously assumes that none of the PWC operating in the Glen Canyon NRA would meet the CARB standards.

The Sierra Report also demonstrates that the DEIS' reference to "moderate" impacts on air quality values from continued PWC use is incorrect and potentially misleading. DEIS at 62-63. The DEIS uses the term "moderate" to characterize the impact of *any* ozone precursor emissions, regardless of how small. The ordinary meaning of "moderate," however, connotes an impact of "medium or average quantity or extent." *See* Sierra Report at 2-3 (citation omitted). As the Sierra Report documents, the incremental ozone impact of the emissions from PWC operating at the Glen Canyon NRA would not be measurable with the most sensitive analyzers available. *Id.* The actual impact of ozone precursor emissions from PWC is negligible. *Id.* at 3.

The DEIS similarly refers to "moderate" cumulative impacts for CO air quality from PWC activity in combination with other watercraft. This characterization is again inaccurate and potentially misleading, since it appears to be based strictly on the estimated annual emissions rate rather than any actual estimate of unhealthful levels of CO in the ambient air. *Id.* The Glen Canyon NRA is already in attainment for the National Ambient Air Quality Standards for CO, and modeling of even the worst-case localized impact of PWC operations demonstrates that no violations of these standards will occur. To the contrary, the Sierra Report shows that under the worst-case PWC operating assumptions and meteorological conditions, rider exposure will be more than 79-87% *below* the applicable air quality standards. *Id.* Shoreline impacts will be even lower. *Id.*

NPS notes that recent studies suggest changing from two-stroke carbureted to two-stroke direct injection PWC engines might increase emissions of polycyclic aromatic hydrocarbon (PAH). The Special Regulations; Areas of the National Park System, 67 *Fed. Reg.* 56,785, 56,790 (Sept. 5, 2002) ("*NPRM*"). The Bluewater Network website and other anti-PWC groups have encouraged their members to submit comments to NPS alleging, among other things, that "PWC engines produce disproportionate amounts of pollutants such as polycyclic aromatic hydrocarbons (PAH), which are toxic to plants and animals even at the minute levels of parts per trillion." *See* <www.Bluewaternetwork.org>. These unsupported assertions wrongly suggest that PAH concentrations associated with PWC activity may create a significant risk.

The study by Kado *et al.* on PAH marine emissions involved two-stroke and four-stroke *outboard* engines and quantified PAH concentrations in *airborne* particulate emissions. *See* Norman Y. Kado *et al.*, *Airborne Particle Emissions from 2- and 4-Stroke Outboard Marine Engines: Polycyclic Aromatic Hydrocarbon and Bioassay Analysis*, 34 Environmental Science & Technology 2714 (2000) ("Kado study"). The direct injected two-stroke outboard engine used in that study was a 1999 model and represented very early, "first-generation" direct injection technology. The results of that study, therefore, are not directly applicable to newer model direct injection outboard engines, much less direct injection or electronic fuel injection/catalyst-equipped PWC engines. Even so, at the PWC Companies' request, Sierra Research performed theoretical air quality modeling, based upon the Kado study findings, to assess whether under a worst case scenario, airborne PAH emissions from continued PWC use in the Glen Canyon NRA could conceivably pose any risk to human health.[2]

The federal standards for permissible exposure to PAHs established by the Occupational Safety and Health Administration ("OSHA") and the National Institute for Occupational Safety and Health ("NIOSH") were used. These federal standards are 0.2 mg/m and 0.1 mg/m, respectively.

In order to ensure a conservative analysis, the theoretical PAH modeling performed by Sierra Research was on based on the most concentrated PWC activity observed at the Glen Canyon NRA, and assumed 399 PWC operating at the southwestern end of Lake Powell for a

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[2] The issue of potential PAH impacts on water resources in the Glen Canyon NRA is discussed in Part IV.B., below.

"peak" average of 5 hours per day. Sierra Report at 9, 11-12. Sierra Research further assumed that all 399 PWC operating in the southwestern end of Lake Powell would travel in a narrow band (50 feet wide) within 200 feet of the shoreline. *Id.* at 11-12. Under this extreme scenario, 91 PWC per hour would pass by any particular point on the shore (or one PWC every 40 seconds). *Id.* at 12.

As fully documented in the Sierra Report, the PAH concentrations derived from this conservative, worst-case modeling are *orders of magnitude below* the permissible exposure limits established by OSHA and NIOSH. The airborne concentrations of PAH compounds that PWC riders might be exposed to in the Glen Canyon NRA are estimated to be less than 0.001% of the OSHA limit and the more conservative NIOSH limit. Shoreline exposures would be even lower. Continued PWC use in the Glen Canyon NRA, therefore, will not pose any adverse health risks for park visitors under even the "worst case" airborne PAH concentrations that could be theoretically generated by the vessels.

B. Water Quality: PWC-Related Water Contaminants In The Glen Canyon NRA Have Declined Substantially Since 1998 And Will Not Have Any Impact On Human Health Or Aquatic Resources.

The primary water quality concern that has been identified regarding continued PWC use in the Glen Canyon NRA is the discharge of unburned gasoline and gasoline additives from conventional carbureted two-stroke engines, as well as the spilling of such components during refueling. DEIS at 83, 85, 165. This concern applies equally to carbureted two-stroke outboards.

The NPS assessment of this concern is based on pre-1999 data and information, which represents the "baseline" level of PWC engine emissions, immediately prior to the implementation of reductions required by the EPA 2006 and CARB 2004 and 2008 emission standards. As noted in the foregoing description of the analysis conducted by Sierra Research, PWC engine emissions in the Glen Canyon NRA have *already* been reduced nearly 25% below the pre-1999 baseline. *See supra* at p. 7.

In addition, EPA has confirmed that studies show most unburned gasoline and gasoline additives emitted from two-stroke marine engines evaporate from water within the first hour and 15 minutes after they are released. *See* Revelt, Jean M., *The Effects of Marine Engine Exhaust Emissions on Water Quality, Summary of Findings of Various Research Studies* (EPA 1994). More specifically, at 86 degrees Fahrenheit (which approximates a minimum daily temperature during the summer peak use period) 84% of the unburned gasoline/additive mix released into the water evaporated within 75 minutes. *Id.* at 4.

As shown in the Sierra Research analysis, the changeover to four-stroke and new technology two-stroke PWC engines that meet the requirements of the EPA 2006 and CARB 2008 emission standards is occurring much more rapidly than EPA and NPS have estimated. Sales of these newer models have already overtaken conventional two-stroke PWCs. The amounts of unburned fuel released at Lake Powell will accordingly continue to decline rapidly, achieving a reduction from the 1998 baseline levels of more than 50% by 2006 and approximately 80% by 2012. *See* Sierra Report at 1. The DEIS, in contrast, only estimated a 25% reduction in hydrocarbon emissions from PWCs in the Glen Canyon NRA by 2006, and only a 50% reduction by 2012. DEIS at 169.

The DEIS notes that Utah water quality standards establish a criterion of 1.2 ug/l for benzene in the immediate vicinity of public drinking water intakes. *Id.* at 91. It appropriately makes clear that this criterion is not applicable to general surface waters of the state. *Id.* Water sampling conducted from June 29 to July 2, 2001 at Lake Powell found benzene concentrations above this concentration at two locations, Moqui Canyon and Bullfrog Marina. *Id.* at 175-76. NPS correctly acknowledges that the Utah state standard is not applicable in either case because neither of these locations is near a public drinking water intake. In addition, none of these samples exceeded the EPA standard of 5 ug/l for treated drinking water. *Id.* at 176. Moreover, these concentrations cannot be attributed to PWC use because both Moqui Canyon and Bullfrog Marina are heavily used by all classes of vessels that use Lake Powell, and Bullfrog Marina contains a fueling station for all vessels. *Id.* Finally, the DEIS correctly concludes that PWC use does not contribute substantially to deterioration of water quality in Lake Powell due to human waste. *Id.* at 83.

The DEIS reaches the conclusion that continued PWC use in accordance with Alternative A or B will not impair water quality in Lake Powell. *Id.* at 176, 178. This conclusion is based on an assessment of potential water quality impacts due to estimated PWC emissions, including available mixing zones. However, this assessment is based on multiple assumptions, some of which are outdated while others represent unrealistic "worst case" conditions. In addition, the assessment completely ignores other clearly relevant factors, such as the rapid evaporation of many hydrocarbon components from the water. The net effect is that the assessment substantially overestimates potential PWC hydrocarbon emissions to the water in Lake Powell. Indeed, the DEIS itself acknowledges that the analysis is based on assumptions that amount to the "most extreme adverse conditions." *Id.* at 174.

At the outset, the assessment assumes "heavy-use" PWC activity which represents the number of PWC observed during peak hours in June and July, 2001, each operating for four hours. More importantly, it assumes that 88% of the PWC have carbureted two-stroke engines that discharge three gallons of unburned gasoline per hour. *Id.* at 173. This assumption, which is based on 2001 data, essentially represents a 10% reduction in emissions from the 1998 "baseline" condition rather than the current situation where PWC emissions have already fallen 25%. *See* Sierra Report at 1. The assessment thus represents an outdated look at potential emissions from an overstated PWC population of conventional two-stroke vessels, and underestimates the accelerating changeover to four-stroke and newer technology two-stroke models. It does not purport to describe the current situation, much less the future when such emissions will have fallen more than 50% by 2006 and 80% by 2012.

The assessment notes that benzo(a)pyrene concentrations in gasoline range from 0.19 to 2.8 mg/kg but chose the highest figure for the analysis. Similarly, MTBE concentrations in gasoline were noted to range from 0% to 15%, but only the highest figure was used. *Id.* at 356, 360. The DEIS also acknowledged that hydrocarbon compounds evaporate rapidly from water and are subject to chemical breakdown, but then states that attenuating factors such as evaporation and photodegradation are not included in the calculations. *Id.* at 169, 174.

Correcting these assumptions would lead to substantially lower estimates of potential PWC hydrocarbon and PAH emissions to the waters of Lake Powell. These estimates in turn would further corroborate that there is no potential for the presence of concentrations of these compounds in water from PWC use under Alternative A or B that could result in the impairment of human health or aquatic resources in the Glen Canyon NRA.

C. Soundscapes: Existing PWC Meet Applicable Noise Standards And Newer Models Are Even Quieter.

Engines are the primary source of noise at the Glen Canyon NRA. *Id.* at 99. Other sources of noise include overhead aircraft, *id.* at 205,[3] electronic music on beaches and houseboats, road noise and vehicles, and mechanical equipment, such as air conditioners and generators. *Id.* at 205-06. The natural ambient sound level in the park is currently 10 to 40 A-weighted decibels, which is relatively low and comparable to other similar park units. *Id.* at 100-01. The natural sound of the park is the benchmark for determining soundscape impacts under NEPA. *Id.*

The NPS regulates boating noise within the Glen Canyon NRA. The existing federal regulation prohibits the operation of PWC or other boats that exceeds 82 decibels when measured at a distance of 82 feet (25 meters) from the vessel. 36 C.F.R. § 3.7.[4] Utah and Arizona also regulate boating noise. Utah has established a maximum noise level of 75 decibels for all motorized vessels. Utah Admin. Code § R651-222-4. Arizona prohibits the operation of motorized vessels that exceeds 86 decibels when measured from a distance of 50 feet or more. Ariz. Admin. Code § R12-4-516. These federal and state standards are enforced in the Glen Canyon NRA by both federal and state law enforcement officers. DEIS at 103.

The DEIS correctly notes that unaltered pre-1998 PWC and current PWC are capable of meeting even the more stringent Utah standard of 75 decibels. *Id.* at 103-04. The DEIS also reports that the noise levels of PWC and other motorized boats were recently tested in the Glen Canyon NRA. The testing data indicate that the maximum noise levels for PWC were actually *lower* than the maximum noise levels for other motorized vessels. In particular, the levels for PWC at 25 meters (82 feet) were approximately 68 to 76 A-weighted decibels; whereas the levels for other motorized vessels at 25 meters (82 feet) were approximately 64 to 86 A-weighted decibels. *Id.* Independent, unbiased sound testing conducted for the Tahoe Regional Planning Authority and the New Jersey State Police have found similar results.[5]

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[3] DEIS notes that PWC noise is not as loud as low-flying aircraft. DEIS at 217.

[4] The United States Coast Guard recommends a maximum noise level of 86 decibels for motorized vessels, and uses the test procedures established in SAE J34 to measure boat noise. SAE J34 measures sound levels from a non-shoreline location of boats operating full throttle at a distance of 82 feet (25 meters). A copy of SAE J34 is annexed as Exhibit 3.

[5] Brown-Buntin Associates, *Environmental Noise Analysis, Lakeland Village Watercraft, Lake Tahoe, CA* (Sept. 14, 1992) (annexed as Exhibit 4); Noise Unlimited Inc., *Boat Noise Tests Using Static and Full-Throttle Measurement Methods*, Sept. 1995 - Oct. 1995 (annexed as Exhibit 5).

The DEIS indicates, however, that noise "fluctuations tended to be greater for personal watercraft than for motorboats." *Id.* at 105. The changes in "pitch" associated with PWC, as well as the tendency of some PWC users to operate the vessels in groups, has reportedly led some park visitors to complain about PWC noise. *Id.* at 16, 21. The NPS has correctly noted elsewhere that "[a]lthough there is currently no legal requirement, manufacturers are currently taking steps to reduce the noise by using more rubber in construction and eliminating vibrations." *NPRM* at 56,791. The NPS has also correctly anticipated that the PWC Companies will continue to reduce the noise associated with the vessels, and that the conversion to newer engine technologies will contribute to reduced noise emissions. *Id.*

Since 1998, the PWC Companies have reduced engine sound levels by up to seventy percent (70%). These reductions in sound levels also involve lowering the sound made as the "pitch" of the engine. Pitch is the measurement of the frequency that the wavelength of sound vibrates, and is the aspect of PWC-associated sound that some claim to be "annoying." To reduce the noise intake, newer model PWC generally utilize air intake resonators with multiple maze-like chambers (or "tunnels"). These chambers eliminate a direct path for the sound waves to escape. As sound waves pass into these chambers, they bounce back and cancel out incoming, identical but opposite "crest" waves. Baffles are used for counter frequency and to quiet vibration. Noise-absorbing foam between the liner and the hull is also used, so the vessels are both quieter and more durable. The thickness of the crankcase wall has been increased to further muffle noise and vibration. In addition, rubber is used as padding around the jet pump dampers to absorb the shock loads and quell driveline noise. Illustrative articles describing more specifically the noise suppression systems used by some of the PWC Companies, and the resulting reductions in sound emissions, are annexed as Exhibits 6 and 7.

In addition to reducing PWC noise emissions through technological innovations, the PWC Companies have recognized that improper maintenance and discourteous operation of any motorized vessel can lead to sound disturbances, such as operating too close to a shoreline. The PWC Companies and the PWIA have actively promoted model state legislation that directly addresses these issues. Entitled the "National Marine Manufacturers Association Model Noise Act," this legislation establishes muffler requirements and maximum noise levels for PWC and other motorized boats, and prescribes accepted SAE standards for testing and enforcement. A copy is annexed as Exhibit 8. Specifically, the Model Noise Act would prohibit the operation of any motorboat, including PWC, in such a manner as to exceed a noise level of 75 decibels measured as specified in SAE J1970 from any point on the shoreline.[6] This provision is similar to Utah's noise abatement statute. The Model Noise Act would also require PWC and other boats to have effective muffler systems that limit noise levels to 90 decibels, when measured through a stationary sound level test as prescribed by SAE J2005.[7] Another provision of the Model Noise Act would further prohibit the manufacture or sale of any motorboat that cannot be operated in compliance with the prescribed sound levels.

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[6] SAE J1970 establishes the procedure for measuring the sound level of pleasure motorboats at a position on the shore under conditions other than stationary mode operation. A copy of SAE J1970 is annexed as Exhibit 9.

The PWC Companies and the PWIA have also sponsored national education programs and user awareness campaigns to promote safe and courteous use of PWC. These efforts have emphasized that the operator of a PWC or any other motorized boat is responsible for controlling the vessel's noise. For example, the PWIA has developed *Sound Advice: 4 Ways to Make the Waters Quieter*. This four-point program is easy to remember and is designed to minimize complaints about PWC noise. The four tips include: (1) Keep the quiet stock exhaust on your boat; (2) Approach and leave shore slowly; (3) Concentrate your high-speed sprints away from the shore; and (4) Avoid early morning and early evening riding near residential areas. A summary of the "Sound Advice" program is annexed as Exhibit 11.

The DEIS properly concludes that continued PWC use in the Glen Canyon NRA will not result in sound emissions that exceed the applicable federal or state noise abatement standards, and that technological innovations by the PWC Companies have already resulted in substantial sound reductions. DEIS at 231. Continued PWC use will not impair the natural soundscape. *Id.* at 216.

Moreover, the DEIS correctly notes that opportunities exist within the recreation area for visitors to experience soundscapes free from man-made sound. *Id.* at 201. Only the area within approximately one mile of the lake would be affected by PWC noise. *Id.* at 103. Unless a visitor was located very close to shoreline, the noise of PWC would be perceived as a humming sound. *Id.* at 205. Under low use conditions, PWC use would be audible only 20% of the time. *Id.* And, as noted, the changeover to newer, cleaner PWC technology will further reduce noise emissions. *Id.* at 231. The closures of portions of the San Juan, Colorado, Dirty Devil, and Escalante Rivers to PWC proposed under Alternative B are also designed, in part, to maintain areas of quiet and solitude along these portions of the rivers. *Id.* at 48, 55-56. These restrictions seem reasonable to promote these interests and to reduce the potential for visitor conflicts. NPS should clarify in any proposed special regulations that these closures would apply to *all* motorized boating, not just PWC.

D. Other Resources: PWC Do Not Impact Other Park Resources Any More Than Other Motorized Boats.

There are no problems between PWC users and wildlife at Lake Powell. The recreation area's law enforcement and environmental staffs are not aware of any reported or documented cases of PWC being responsible for adverse impacts on high-interest wildlife resources and wildlife habitats. *Id.* at 217-18. The DEIS also reports that very few PWC users are out from dusk to dawn when animals feed and drink at the water. *See id.* at 217.

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[7] SAE J2005 establishes the procedure for determining if a pleasure motorboat has effective exhaust muffling means when operating in a stationary mode. A copy of SAE J2005 is annexed as Exhibit 10.

Some opponents of PWC have attempted to attribute birds' failure to breed on boat noise, but the DEIS finds that changing water levels is a more likely cause of the problem. *Id.* at 108. As water levels increase during the summer months, nests are drowned and abandoned. *Id.* Furthermore, the DEIS notes that waterfowl, shorebirds, wading birds, and other water-associated bird species tend to concentrate in highest number and greatest diversity at Lake Powell in the late fall, winter, and early spring moths. *Id.* PWC interaction with this wildlife is mitigated by the fact all watercraft use peaks in the months of May through October, with this six month period accounting for 92% of all boat days. *Id.* at 126. Sparse shoreline vegetation and fluctuating water levels make little habitat available for aquatic animals and mammals such as deer. *Id.* at 107. Finally, the DEIS reports that there is no known interaction between PWC users and wildlife or threatened species. *Id.* at 113, 120.

The DEIS notes two studies on the subject of PWC impacts on wildlife. *Id.* at 217. The studies reported that potential noise impacts "would be limited" and "similar to effects of other types of 2-cycle outboard engine watercraft." *Id.* The NPS has elsewhere recognized that PWC cannot be singled out as a separate or distinct impact on wildlife. *NPRM* at 56,788-89.

Since 1995, Dr. James Rodgers of the Florida Fish and Wildlife Conservation Commission has been conducting scientific studies of the effects of human disturbances on wildlife. Because this research is broad, and not just PWC specific, Dr. Rodgers' findings are particularly relevant to the NPS personal watercraft rulemakings in general, and specifically the proposed rule. Through his research, Dr. Rodgers has found that any human interaction with wildlife will likely cause some disturbance. However, his studies have shown that PWC are no more likely to disturb wildlife than any other form of human interaction. Additionally, in many cases, PWC posed less of a disturbance than other vessel types. Dr. Rodgers' research clearly shows that there is no reason to differentiate PWC from motorized boating based on claims on wildlife disturbance. *See Roberts v. Mainella*, V-02-22, Affidavit of James A. Rodgers, Jr. (S.D. Tex. Apr. 4, 2002) (annexed as Exhibit 12); James A. Rodgers, Jr. & Henry T. Smith, *Buffer Zone Distances to Protect Foraging and Loafing Waterbirds from Human Disturbance in Florida*, 25 Wildlife Society Bulletin 139 (1997) (annexed as Exhibit 13); James A. Rodgers, Jr. & Stephen T. Schwikert, *Buffer-Zone Distances to Protect Foraging and Loafing Waterbirds from Disturbances by Personal Watercraft and Outboard-Powered Boats*, 16 Conservation Biology 216 (Feb. 2002) (annexed as Exhibit 14); James A. Rodgers, Jr. & Stephen T. Schwikert, *Buffer Zone Distances to Protect Foraging and Loafing Waterbirds from Disturbances by Personal Watercraft in Florida*, Bureau of Wildlife Diversity Conservation Annual Report (2000) (annexed as Exhibit 15). Moreover, some studies indicate that non-motorized intrusions -- such as canoeists and kayakers -- can be more stressful and damaging than motorized activity, which provides greater advance warning to wildlife. James A. Rodgers, Jr. & Henry T. Smith, *Set-Back Distances to Protect Nesting Bird Colonies from Human Disturbance in Florida*, 9 Conservation Biology 89 (1995) (annexed as Exhibit 16).

Although the DEIS identifies a potential concern that the beaching and landing of PWC could result in the trampling of shoreline vegetation, *id.* at 236, the report also states that vegetation is rarely present near the shoreline of Lake Powell, *id.* at 121, and that the vegetation present is extremely resilient, *id.* at 239. The saltcedars and shrubs along the shore would not be damaged by PWC users. *Id.*

The DEIS notes that areas of submerged aquatic vegetation are generally scarce and poorly developed at the recreation area. *Id.* at 121. The DEIS further notes that PWC effects on shoreline or submerged aquatic vegetation would be indistinguishable from other visitor-induced effects. *Id.* at 239-40. Indeed, because PWC lack an exposed propeller, they are much more environmentally friendly in shallow water areas. Moreover, to prevent potential damage to the jet pump machinery that powers the vessels, the PWC Companies expressly warn against operation in water less than two feet deep. The only comprehensive test evaluating the impact of PWC on seagrasses indicates that PWC use as recommended by the manufacturers does *not* affect seagrass beds, water turbidity or cause scarring of the grassbeds. *See* Continental Shelf Associates, Inc., *Effects of Personal Watercraft Operation on Shallow-Water Seagrass Communities in the Florida Keys* (1997) (annexed as Exhibit 17).

E. Cultural Resources And Tribal Activities Will Be Adequately Protected.

The DEIS notes that the recreation area's geographic features and natural landscape are considered sacred to Native Americans. DEIS at 144. NPS identifies a potential concern that the ability of PWC operators to access remote areas of the park unit could intrude on traditional tribal activities and make certain cultural sites vulnerable to trampling, looting, and vandalism. *Id.* at 256.

The DEIS does not document any instances where these problems have occurred. Nor is there any reason to believe that PWC users are more likely to pose these concerns than canoeists, kayakers, hikers, or others who might access these same areas. Even so, Alternative B proposes to prohibit PWC use in several areas to protect against potential adverse impacts to these resources.

The PWIA and the PWC Companies fully respect these important cultural resources and tribal activities, and generally support the restrictions proposed in Alternative B in order to protect them. NPS should consider similar restrictions on all motorized and non-motorized boating, as well as other types of activities that might intrude into these areas. Otherwise, the proposed restrictions on PWC would be discriminatory without any valid justification.

F. Socioeconomic Concerns: Continued PWC Use Is Vitally Important To The Regional Economy.

PWC sales and rentals are an important part of the regional economy at the Glen Canyon NRA. *Id.* at 23. The DEIS projects that if PWC use were eliminated, users would return to the Glen Canyon NRA within 10 years with other motorized watercraft. *Id.* at 162, 170-71. However, in the short term there would be significant adverse effects to the local economy, including a decline in park visitors, restaurant and hotel sales, and related business activities. *Id.* at 273. The adverse economic impacts caused by the elimination of PWC rentals, sales, repairs, and related activities would be permanent. *Id.* at 274.

PWC use is very popular at Lake Powell. The NPS has identified 11 businesses in Page, Arizona that rent, sell, or service PWC.[8] The DEIS estimates that approximately 65% of PWC rentals originate in Page. *Id.* at 147. This indicates that there were about 14,300 days of PWC rental in Page in 2001. *Id.* In addition, visitors to the Glen Canyon NRA own about 48,000 PWC. *Id.*

There are essentially no other nearby opportunities for PWC use. *Id.* at 146. It is estimated that visitors travel an average of 255 miles to Glen Canyon NRA. *See id.* at 147. The next closest bodies of water (Great Salt Lake and Utah Lake) are approximately 400 miles away. *Id.* at 146.

As noted, the DEIS projects that if PWC were banned, users would return within 10 years with other types of motorized watercraft. The number of motorized watercraft in the recreation area, therefore, would ultimately be the same even under the no-action alternative evaluated in the DEIS. *Id.* at 162, 170-71. Any "impacts" that the NPS attempts to eliminate by banning of PWC would likely be reintroduced within 10 years. Given the dramatic strides in emissions reductions the PWC industry has already achieved and will achieve over the next 10 years, it is likely that any motorized boating activity that replaces PWC use in the recreation area would pose greater impacts.

The DEIS and the additional data supplied in these joint comments confirm that continued PWC use will *not* impair any of the resources in the Glen Canyon NRA, and that the rapid changeover to cleaner, more efficient, and quieter PWC will further reduce any impacts from the vessels. The existing ban on PWC use in the recreation area is unjustified and will continue to cause significant negative socioeconomic impacts on the region for no valid reason. Under these circumstances, it is imperative that NPS promulgate a special regulation permitting continued PWC use, along the lines outlined in Alternative B, as expeditiously as possible.

V. Continued PWC Use Presents No Unique Or Disproportionate Safety Problem In The Glen Canyon NRA.

Boat design and boating safety, as a general matter, are within the exclusive jurisdiction of the United States Coast Guard. *See* H.R. Rep. No. 94-1569, at 13 (1976), *reprinted in* 1976 U.S.C.C.A.N. 4290, 4299. The Coast Guard has reviewed and approved all past and current PWC designs, expressly finding that the manufacture and sale of such vessels "would not adversely affect boating safety." *See* 46 U.S.C. § 4305.[9]

A study of boating accidents at Glen Canyon, during the period 1999 to 2001, found that:

(1) PWCs accounted for 26% of all "boat days" at Glen Canyon. A "boat day" equals one watercraft on the water for a 24-hour period.

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[8] Two additional rental shops were identified in Big Water, Utah. DEIS at 147.

[9] In August 2002, the SAE PWC Subcommittee, with support from the Coast Guard, completed balloting of SAE Recommended Practice J2608, which establishes a test methodology and criteria for off-throttle steering performance of PWC beginning with the 2006 model year. Some PWC models already meet these criteria. A copy of J2608, as balloted, is annexed as Exhibit 18.

(2) PWCs accounted for 115 of the 811 accidents, or approximately 14% of all accidents. As the DEIS reports, this is a little more than half of the expected accidents based on 26% of all "boat days".

(3) PWCs accounted for 89 of the 444 accidents involving personal injury, or approximately 20% of the accidents involving personal injury. As the DEIS again reports, this is less than expected based on 26% of all "boat days".

See DEIS at 138-39.

The PWC accident data from the Glen Canyon NRA demonstrate the inherent unreliability of national estimates of PWC accidents. The DEIS cites to outdated statistics reported by the National Transportation Safety Board ("NTSB"), which indicated that in 1996 PWC represented 7.5% of state-registered recreational boats but accounted for 36% of the recreational boating accidents that were reported. *Id.* These NTSB estimates were drawn from the Boating Accident Report Database ("BARD") maintained by the Coast Guard. The NTSB estimates are often misunderstood and are not a valid basis for informed rulemaking.

Only a small percentage of boating accidents are reported and the frequency of reporting varies widely among boat types. For these reasons, the Coast Guard expressly cautions in its BARD documentation that:

> Non-fatal accidents cannot be assumed to have occurred in numbers proportional to the reported statistics because the act of reporting an accident is not a random sampling of accidents in the statistical sense. Rather, selection is based on the ability and willingness of those involved to file a report. The reporting rates of subgroups of accidents, such as those involving personal watercraft . . . probably differ greatly depending upon unspecified variables.

2000 United States Coast Guard Boating Statistics at 5.

Several factors suggest that PWC accidents are in fact reported more often than other boating accidents. For example, PWC are rented more frequently and rental operators report most accidents for insurance and product liability reasons. Many PWC accidents also involve collisions and must be reported under most state laws. In contrast, people often do not report accidents when they have fallen in an open motorboat, injured themselves while starting up an outboard motor, or suffered injuries while canoeing or kayaking.

Apart from the lack of reliable accident data, the national estimates of boating accidents fail to account for the differences in hours of use or "exposure rates" for different boat types. Available studies suggest that PWC are used much more frequently than other types of boats.[10]

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[10] Some studies suggest that PWC are on the water as much as three times more than some other types of boats. The National Marine Manufacturers Association has also reported that owners of larger boats do not use their vessels are frequently as PWC owners.

Without valid exposure data, it is impossible to draw any meaningful or reliable comparisons between PWC-related accidents and other boat accidents.

For these reasons, the type of site-specific accident analysis reflected in the DEIS provides a more reliable basis for sound rulemaking. The study of boating accidents at the Glen Canyon NRA conclusively shows that PWC do not pose a unique or disproportionate safety risk to park visitors.

The DEIS also notes that PWC-related accidents in the park unit have involved underage operation; use of the craft at unsafe speeds; unsafe proximity to other vessels, objects, or visitors; and no personal flotation devices. DEIS at 139. The Coast Guard has similarly found that operator inattention, reckless operation, and inexperience are primary causes of boating accidents for PWCs and other motorized vessels. 2000 United States Coast Guard Boating Statistics at 7, 19; <www.uscg.mil/overview/issue%20pwc.htm>.

The PWC Companies and the PWIA strongly support mandatory boater education, minimum age requirements, and strict enforcement of navigation and safety regulations in every state. Model legislation developed by the PWIA encourages all states to establish a minimum age of sixteen (16) years to operate a PWC and a minimum age of eighteen (18) to rent a PWC. The model legislation also establishes mandatory boater education, requires rental operators to administer prescribed boating safety instruction, and imposes other reasonable regulations on PWC use. A copy of the PWIA's model legislation is annexed as Exhibit 19. As reported by the Coast Guard, the PWC Companies have also voluntarily agreed to restrict the maximum speed of future models to 65 miles per hour. *See* <www.uscg.mil/overview/issue%20pwc.htm>.

Arizona and Utah have already addressed some of these requirements in their state regulations. Utah, for example, requires children aged 12 and older to complete a mandatory boating education course before operating PWC, and children aged 12 to 15 must remain within visual parental supervision. Utah Code § 73-18-15.2. Arizona prohibits PWC operation at speeds that are unreasonable for existing conditions, and makes it unlawful to operate PWC closer that 60 feet to another vessel unless at wakeless speed, to jump wakes within 60 feet of a vessel, or to maneuver quickly or turn sharply within 60 feet of another vessel, unless to avoid a collision. Ariz. Rev. Stat. § 5-530. Enforcement of these and other provisions of Arizona and Utah law will help to assure safe boating experiences for all visitors to the Glen Canyon NRA. The PWIA and the PWC Companies also support the NPS' stated objective of working with Arizona and Utah to develop unified laws for PWC operation in the recreation area, and believe that PWIA's model legislation should be considered as part of these efforts.

VI. PWC Are Well-Accepted In The Glen Canyon NRA, Are Primarily Used For General Family Recreation, And Are Consistent With The Recreational Objectives Of The Park.

The DEIS reports that in 2001, PWC comprised 26% of the "boat days" at the Glen Canyon NRA. DEIS at 139. Thirty-nine percent (39%) of houseboat groups included at least one PWC, and twenty-five percent (25%) of powerboat groups included at least one PWC. *Id.* at 126. Many PWC are used by a large group of friends or family, *id.*, and the distribution of PWC use "is very similar to the distribution of use by other watercraft," *id.* at 127. The DEIS also estimates that if PWC were banned from the park, it would take 10 years before the total number of "motorized watercraft days" on Lake Powell would be equal to those occurring under Alternatives A or B. *Id.* at 162.

These findings are consistent with the demographic and usage information compiled by the PWC Companies. According to a May 2002 survey of 1,700 randomly-chosen PWC owners, the average PWC purchaser is forty-two (42) years old, nearly seventy percent (70%) are married, and over forty percent (40%) have children living in the household. The primary uses of the vessels are family-oriented, including short cruises, sightseeing, and pulling water-skiers, tubes, and wakeboards. Representative marketing brochures showing current model lines are annexed as Exhibits 20-22.

The current, objective data about PWC purchasers and users debunk the caricature of hoodlum, thrill-seekers that opponents of the vessels have consistently attempted to create. The *facts* reported in the DEIS show that continued PWC usage is consistent with the recreational objectives of the Glen Canyon NRA and can be effectively managed through reasonable, fair regulations.

VII. Alternative B Should Be Modified Or Clarified In Some Areas.

A. Requiring Only PWC To Operate At No-Wake Speed Is Discriminatory And Would Create Serious Safety Hazards For PWC Operators And Other Boaters.

Under Alternative B, it appears that PWC would have to operate at wakeless speed on certain segments of the Dirty Devil and Escalante Rivers while other boats could operate at normal speed in the same area. *Id.* at 55-56. The DEIS also singles out PWC for operation at wakeless speed in these locations, purportedly to reduce visitor conflict and maintain a natural sound quality. *Id.* at 56.

The DEIS does not contain any data that would justify no-wake restrictions on PWC only. The DEIS itself demonstrates that the potential impacts on the environment and park resources are essentially the same for Alternatives A, B, and C. The more current, comprehensive information supplied in these joint comments shows that the impact and impairment analyses in the DEIS are *overstated* and fail to account for changes in engine technology, noise reduction, and site-specific emissions and accident data. Imposing these no-wake restrictions on PWC only would be unreasonably discriminatory.

The proposed no-wake speed restrictions on the Dirty Devil and Escalante Rivers would also pose substantial safety hazard to all boaters, including PWC operators and passengers. The Coast Guard recommended against similar proposals, in response to a recent congressional initiative that would have restricted PWC to no-wake speed in waters less than two feet in depth. As stated in the Coast Guard's response:

> ***Could the speed differential between PWC traveling at no-wake speed in the same area with other unlimited-speed motorized boats present a safety hazard?***
>
> Restricting only PWC to no-wake speed in shallow water could present a safety hazard if other vessels operated in the same area were operated at significantly faster speeds. Although most larger boats would be restricted due to the water depth, some, such as jet boats or airboats, could operate at significantly higher speeds.

Letter from J.C. Card, Acting Commandant, U.S. Coast Guard to Hon. Dave Weldon of May 28, 1999, at 1 (annexed as Exhibit 23).

NASBLA has also adopted a policy position on speed and proximity that requires uniform application of no-wake zones to all motorized vessels. A copy is annexed as Exhibit 24. NASBLA's policy position recognizes that "operation of a vessel at a speed in excess of headway speed while in close proximity to another vessel, marked swim area, or swimmer is dangerous and irresponsible behavior." NASBLA thus recommends "that any legislation enacted by states in regard to speed and proximity requirements should be applicable to all vessels."

The safety hazards identified by the Coast Guard and NASBLA would be even greater under the proposed rule here. PWC operators would be forced to operate at minimal speeds on the Dirty Devil and Escalante Rivers while larger, more powerful craft operate around them. In order to avoid a collision, PWC operators would be forced to violate the regulation.

There is no basis to impose no-wake restrictions on PWC only, as proposed in Alternative B, and doing so would endanger all boaters. For these reasons, any no-wake zones established under the special regulation in the Dirty Devil and Escalante Rivers (or any other areas) should be applied to all motorized vessels, not just PWC.[11]

B. Any River Closures Should Also Apply To All Motorized Boats, Not Just PWC.

Alternative B would adopt existing restrictions on PWC use on the San Juan River upstream of Clay Hills. *See* DEIS at 45, 48. Although this restriction is designed to reduce user conflicts and to provide visitors an opportunity to experience quiet and solitude, it would not apply to other motorized boats. *See id.* Similarly, Alternative B would single out PWC for closures of portions of Escalante (to reduce visitor conflicts and promote a quiet atmosphere),

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[11] The three-year pilot study proposed under Alternative B would establish additional no-wake speed restrictions in various coves and areas of the Glen Canyon NRA. DEIS App. C, at 332. It appears that these restrictions would apply to all motorized boats, not just PWC. Any study conducted pursuant to this proposal should adopt uniform speed and proximity restrictions for all vessels, for the reasons shown above.

Dirty Devil (to reduce user conflict and protect "environmental values"), and Colorado (to prevent visitors from endangering themselves on rapids) Rivers. *Id.*

The DEIS does not contain any data that would justify singling out PWC but not other motorized boats for these river closures. There is no basis to conclude that PWC impact "environmental values" to any different degree from other motorized vessels; to the contrary, the rapid changeover to cleaner, quiet PWC engine technologies documented in the Sierra Report shows the PWC likely have lesser impacts than other motorized boats. Furthermore, allowing other motorized vessels to operate in some of these areas would undermine the purported goals of reducing user conflicts and allowing for solitude and quiet. Closing these river areas to PWC, and not other motorized vessels, would be discriminatory.

C. Access To Areas Of Cultural Significance And Traditional Tribal Activities Should Be Restricted For All Park Visitors, Not Just PWC Users.

As discussed above, the PWIA and the PWC Companies respect the important cultural resources and traditional tribal activities in the Glen Canyon NRA. The restrictions on PWC use proposed under Alternative B should help to protect these resources and activities from intrusion. There is no legitimate reason, however, for NPS to impose these restrictions on PWC users only. Canoeists, kayakers, hikers, and others should be restricted from accessing these sensitive areas, for the same reasons identified in the DEIS.

VIII. Continued PWC Use Is Consistent With The Glen Canyon NRA's Enabling Legislation And NPS Policy.

Glen Canyon NRA was established "to provide for public outdoor recreation use and enjoyment of Lake Powell and lands adjacent thereto . . . and to preserve scenic, scientific, and historic features contributing to public enjoyment of the area." Pub. L. No. 92-593, 86 Stat. 1333, *reprinted in* 1972 U.S.C.C.A.N. at 1526. NPS' current management policies provide that continued PWC use can be authorized if an evaluation of the Glen Canyon NRA's enabling legislation, resources and values, other visitor uses, and overall management objectives confirms it is appropriate. It must also be consistent with the criteria governing visitor use generally. 2001 NPS Policies § 8.2.3.3. The general visitor criteria similarly indicate that a use must be appropriate to the park's purpose and environment, not create an unsafe environment for other visitors, and not cause unacceptable impacts which rise to the level of "impairing" park resources. *Id.* § 8.2.

Continued PWC use is clearly consistent with the Glen Canyon NRA's enabling legislation. PWC use is appropriate to the park's purpose and environment, and the additional data and information provided with these joint comments demonstrate that PWC impacts to air and water resources and soundscapes, while acceptable during the 1998 "baseline" period, have been reduced substantially and will be further reduced by advancing technology over the next ten years. There is no separate or distinct PWC safety problem in the recreation area, and any visitor conflicts can be effectively managed through reasonable regulations. Both survey data and the Park Service's own assessment confirms that visitors at the Glen Canyon NRA expect and accept PWC use as part of the mix of recreational activities in the area. In short, under no analysis can

it be reasonably concluded that the current and future impacts of PWC use rise to the level of an "impairment" of park resources or visitor experiences in the Glen Canyon NRA.

IX. NPS Has Complied With The Requirements Of NEPA.

NEPA requires that an environmental impact statement ("EIS") be prepared for any "major Federal action significantly affecting the quality of the human environment . . . ." 40 C.F.R. §§ 1508.5, 1508.11. The EIS is to provide full and fair discussion of significant environmental impacts and to inform decision-makers and the public of reasonable alternatives which would minimize adverse impact to the environment. *Id.* § 1502.1.[12]

NEPA does not contain a separate provision for judicial review; therefore, the statute will be interpreted under the arbitrary and capricious standard of the Administrative Procedure Act. 42 U.S.C. § 4321; 5 U.S.C. § 706(2)(A). Applying the arbitrary and capricious standard, the United States District Court for the District of Columbia has explained that:

> In reviewing a federal agency's compliance with NEPA, the Court employs a highly deferential standard of review. "Neither [NEPA] nor its legislative history contemplates that a court should substitute its judgment for that of the agency as to the environmental consequences of the actions." "The only role for a court is to insure that the agency has taken a 'hard look' at environmental consequences."

Defenders of Wildlife v. Babbitt, 130 F. Supp. 2d 121, 136-37 (D.D.C. 2001) (citations omitted).

The DEIS analyzes the short- and long-term environmental and other consequences of the three alternatives considered by NPS, including the cumulative impacts of each on the full range of relevant factors under NEPA. The DEIS, along with the additional PWC usage, emissions, and other information provided in these joint comments, enable NPS to take a "hard look" at these various impacts and to promulgate a special regulation that permits continued PWC use in the vast majority of the Glen Canyon NRA.

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[12] The Bluewater Network settlement agreement also states that the continued use of PWC "will be based on appropriate environmental analysis under the National Environmental Policy Act, which analysis will, *inter alia*, consider the impacts of PWC use in the particular unit." Settlement Agreement ¶ 5. The settlement agreement specifies several factors relevant to an environmental analysis under NEPA, including air and water quality, soundscapes, wildlife and wildlife habitat, shoreline vegetation, and visitor conflict and safety. *See supra* at p. 4. Under NEPA, however, the scope of any particular assessment is to be established by the agency. Accordingly, NPS conducted public scoping and identified additional factors for consideration as part of the DEIS, including endangered or threatened species, wetlands and submerged aquatic vegetation, socioeconomic effects, and national recreation area operations. DEIS at 20-21.

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X. Conclusion

The PWIA and its member companies urge the NPS to issue final special regulations allowing continued, non-discriminatory PWC use in the Glen Canyon NRA as expeditiously as possible. PWC use is a well-accepted activity in the park, and the NPS' thorough and objective examination of the impacts of PWC demonstrates that continued use of the vessels is fully appropriate. These joint comments of the PWC Companies and the PWIA provide the most recent and accurate information about PWC usage and emissions available. This information provides important additional support for the proposed rule, and validates many of the findings of the NPS in the DEIS.

The objective, current, and comprehensive information about PWC presented in the DEIS and these joint comments also refutes the stale claims, "junk" science, and other mischaracterizations made by opponents of PWC. The NPS should resist pressure from these special interest anti-motorized recreation groups, who speak for a small minority and seek to impose their own restrictive preferences on the use of park resources. As the DEIS documents, there is room enough in the Glen Canyon NRA to accommodate a wide range of appropriate recreational opportunities, including PWC.

Very truly yours,

Kirsten Rowe

Kirsten Rowe
Executive Director, PWIA

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RIVER RUNNERS FOR WILDERNESS
A PROJECT OF LIVING RIVERS

November 26, 2002

Kitty Roberts
Glen Canyon National Recreation Are
PO Box 1507
Page, AZ 86040-1507

RE PWC DEIS

Dear Superintendent Roberts,

It is difficult to imagine a more intrusive, peace-shattering, unsafe, wildlife-scaring activity than PWC use except possibly snowmobiles. Our National Parks and National Recreation Areas and the people that visit them deserve to be largely free of PWC intrusion.

The spectacular rock vistas and canyons of Glen Canyon and Powell Reservoir should be a place for enjoyment and solitude and safe recreation, particularly for the many children and families that visit. It is obvious that PWCs impair and degrade the resource and wildlife wherever they are allowed.

River Runners for Wilderness urges the adoption of Alternative C of the draft environmental impact statement (DEIS) to permanently ban PWC "thrillcraft" in Glen Canyon NRA.

Sincerely,

Jo Johnson

Jo Johnson
Co-Director
River Runners for Wilderness
[redacted]

[redacted]

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SIERRA CLUB – Recreation Issues Committee
[redacted]

November 27, 2002

Superintendent
Glen Canyon National Recreation Area
P.O. Box 1507
Page, AZ 86040

GLCA@den.nps.gov

RE: **COMMENTS OF SIERRA CLUB – RECREATION ISSUES COMMITTEE On "Glen Canyon National Recreation Area – *Personal Watercraft Rulemaking And Draft Environmental Impact Statement*"**

The Sierra Club's national Recreation Issues Committee, representing the approximately 740,000 members of the Sierra Club, presents the following Comments on the Personal Watercraft Rulemaking and DEIS. We are commenting primarily on the Soundscape and Noise element relating to the Personal Watercraft Usage. "Jet Skis" and "Personal Watercraft" are terms that will be used interchangeably throughout.

Other Chapters of the Club -- most notably our chapters representing Utah and Arizona -- are commenting as to the Alternatives, and to additional impact concerns. We support the corresponding position(s) being taken by these Chapters.

LEGAL AUTHORITIES: SOUNDSCAPE PROTECTION

A principal concern is the noise of motors from Personal Watercraft.

Protection of National Park System Soundscapes from the noise of motors (particularly aircraft, but also in general) has been recognized through the following laws and regulations, among many others:

- P.L. 93-620 "Grand Canyon Enlargement Act of 1975", see section on aircraft noise.
- P.L. 100-91 "National Parks Overflights Act of 1987"
- P.L. 106-81 "National Parks Air Tours Management Act of 2000" (see Title VIII)

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- NPS Director's Order 47 and Reference Manual 47
- The Wilderness Act of 1964

Re Wilderness: We note that large portions of the Lake Powell shoreline are in the Natural Zone, and that virtually all of those lands were proposed as *Wilderness* in 1979 (see DEIS at 102). Therefore, the following definitions of The Wilderness Act should be applicable from that shoreline inland:

"A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does remain. An area of wilderness is further defined to mean in this chapter an area of underdeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value."

Therefore, the *Management Goal* for the soundscape in virtually all of the Natural Zone should be: "The soundscape of the designated wilderness component of the Natural Zone is managed in a manner designed to allow no or, at worst, minimal intrusion of manmade noise on the sounds of nature and the ability of visitors to experience such sounds. Visitors to the designated wilderness areas are able to enjoy serenity, tranquility and solitude almost all of the time. Natural resources, including sensitive animal species, receive maximum protection from manmade noise."

KEY POINT: The intrusive noise of watercraft audible one to two miles into this zone, including especially that from PWC's, is inconsistent with the above goal.

INCOMPLETE SOUNDSCAPE ANALYSIS OF GLEN CANYON NRA (GCNRA)

The soundscape analysis for the GCNRA appropriate to this Plan has not been completed. The beginnings of such analysis appeared competently in the Draft HMMH Technical Report. However, its incompleteness as a full soundscape analysis is documented in the last two sentences of the DEIS on page 57.

Evidence it has not been completed is the absence of a documented baseline from sites without any PWC/boat noise.

KEY POINT: Before reinstating jet skis, the NPS at minimum therefore needs to perform complete acoustic data collection and analysis throughout the Glen Canyon NRA, sufficient for NPS to assess the impacts of current and proposed jet ski and other watercraft usage on the natural soundscape there.

An exemplary data set for Zion National Park has just become available in the new draft "Wyle Report", WR 02-07, "The Soundscape in Zion National Park", Contract No. 1443-CX2000-98-038 (May, 2002). According to the report: "This data set characterizes the soundscape in Zion. More generally, this report shows a method that can be replicated to measure the soundscape in other parks."

The Sierra Club believes that renewed PWC usage of Glen Canyon NRA should be permitted only after a similar, in-depth soundscape study has been completed.

KEY POINT: No Record of Decision or Final Environmental Impact Statement for the Glen Canyon NRA Watercraft Management Plan should be issued until a complete soundscape study, comparable to the Zion study, has been done at GCNRA, and its data considered in evaluation of all alternatives.

INADEQUATE CUMULATIVE IMPACTS ANALYSIS

KEY POINT: The cumulative impacts analysis re noise, required under NEPA, is grossly insufficient. It simply was not performed, judging from the sketchy material presented on pages 205-206, 207, or 209, for example, in the DEIS.

According to the May, 2002 decision from the U.S. Court of Appeals, D.C. Circuit in Case No. 01-1154, "Grand Canyon Trust vs. Federal Aviation Administration", the following elements must be covered:

- The area in which the noise effects of the proposed project will be felt;
- The noise impacts that are expected in that area from the proposed project;
- Other actions – past, present, and proposed, and reasonably foreseeable—that have had or are expected to have noise impacts in the same area;
- The noise impacts or expected noise impacts from these other actions; and
- The overall noise impact that can be expected if the individual noise impacts are allowed to accumulate.

KEY POINT: The DEIS does not quantify or aggregate the "other actions'" noise impacts. It thus doesn't forecast or measure cumulative impacts of noise in the Park from *all* of the various human-made noise sources (airspace/lake/land.)

Particularly deficient is the absence of any quantitative cumulative analysis of the noise load over the Park derived from aircraft above, out to the year 2015. This belies the NPS promise on page 161 of the DEIS to "determine cumulative effects by evaluating the (PWC) effect in conjunction with the past, current, or foreseeable future actions for GCNRA and the region." As the Court ruled for nearby Zion National Park, it is the *total noise load* aggregated from all these actions and sources that must be computed.

INADEQUATE MEASURABLE STANDARDS AND INDICATORS RE NOISE

The Noise indicators, standards, and thresholds are mostly qualitative, vague, and therefore are subject to arbitrary interpretation and application. In the FEIS, as in any future Soundscape Management Plan, these must be quantifiably established.

KEY POINT: We request that NPS employ a Supplemental Metric, the *"Median Quiet Interval" (MQI)* in this regard. MQI is defined as *the median time interval where there is no motorized noise-intrusion audible*. This would provide a key, "user-friendly" impact assessment indicator of how extended or truncated is the typical opportunity of Park users to experience natural quiet unimpaired.

KEY LITERATURE SOURCE NOT APPLIED

Nowhere in the DEIS is there genuine application of a cited key Report: *"Drowning in Noise: Noise Costs of Jet Skis in America" – a Report for the Noise Pollution Clearing house, by Charles Komanoff and Howard Shaw, (April, 2000).*

KEY POINT: The FEIS should specifically apply the key findings of the "Drowning in Noise" Report.

That Report finds that the most effective way to reduce noise annoyance and lost enjoyment is

- To concentrate PWC usage in a few designated areas;
- To restrict operation to at least one quarter of a mile from the shore;
- To require all new machines to be 5 dBA quieter.

Together, these three strategies would reduce the disamenity costs of lost enjoyment by 85%.

That report also applied a factor described as *"Robinson's Formula"*, regarding the demonstrable extra impact from *rapid noise level fluctuations* to perceived noise impact. This formula or comparable psycho-acoustic adjustment should be utilized in this EIS. (See at Page 21 of that report for formula: *Lnp = Leq + 2.56 x Sigma*, which thus should be applied, utilizing data in Figs 29-30 of the Draft Noise Study.) To ignore this issue is not acceptable.

The Report's other scientific principles and findings also need to be applied at Lake Powell.

INCOMPLETE NPS PLANNING DOCUMENTS AND EFFORTS

Along with completion of a full Soundscape data collection and analysis specifically for the Glen Canyon NRA, the National Park Service should complete (1) the a "Soundscape Management Plan" for the Park (as per Director's Order 47), as well as (2) the NPS Reference Manual 47. It should also complete (3) the "Lake Management Plan" intended as per Alternative "B."

The Final Environmental Impact Statement, at minimum, should (1) update the status of the Soundscape Management Planning for the Lake Mead NRA, and (2) update the direction and guidance being provided in Reference Manual 47, and (3) provide an updated timeline for the proposed Lake Management Plan ("Alternative B", should that alternative be selected.)

PARK ACREAGE ASSIGNED FOR PWC USE IS TOO HIGH

The 90 - 99% time-area allotment of Lake Powell that would continue for PWC use-- under Alternatives A or B-- is *far too high.* All users, including those on other and quieter or more stationary watercraft, should be able to enjoy the Park.

TEMPORAL "TIME-SHARING" SHOULD BE INSTITUTED

KEY POINT *Temporal* - not just spatial - limits for PWC use should be set.

Temporal mitigation could easily have been instituted at Lake Powell. It appears to have been improperly eliminated as an Alternative to be considered (See p. 61 of the DEIS.) This alternative should either be specifically listed among the eliminated alternatives, or become part of the Final EIS mitigation strategy.

For example, morning and sunset/evening curfews – analogous to those currently imposed on air tours over the Grand Canyon – should be specified for a substantial portion of the Park's water acreage. This would afford a genuine sense of choice and "respite" for all Park users. It also would reflect a Park Service quality standard that respects the enhanced, particular "power of place" that obtains at dawn and sunrise, sunset and twilight.

(Another mitigation of this sort – as the recent Lake Mead Lake Management DEIS appropriately recognized -- is during high season to set aside one or more days per week, for no PWC usage.)

Also, one "Alternative Eliminated" – arbitrarily and capriciously -- appears to have been requiring 4-stroke engines on PWC's. A reason should have been provided.

DETAILED COMMENTS ON THE DEIS

1. **KEY POINT:** The Sierra Club disagrees with the DEIS' key assumption, that if there was a ban on PWC users at GCNRA, these users would all return with boats within two or three years. That is an unsupported assumption. Other assumptions should also have been modeled, most notably (1) that the Lake Management Plan and/or the Soundscape Management Plan would reduce the number of watercraft operations to protect the soundscape; or (2) that many of the PWC users would simply recreate elsewhere instead of coming to Lake Powell. The Sierra Club requests revised forecasts in the EIS including both of these reasonable, *alternative* assumptions.

2. Page 132: Beyond the cited user survey, there needs to be an additional survey of "Desired Experience" from *non*-boat users and *back-country* users, this time. When will NPS complete a survey with these audiences targeted?

3. Page 162-163: **"Impairment Analysis Method"**. We note that Wilderness management, though stated as a goal in the Park's GMP, is ignored in "other relevant Park planning methods". It is insufficiently served by Alternative "B" and not at all by Alternative "A". Only Alternative "C" correlates satisfactorily with the values of Wilderness Management.

4. Page 163-164: **"Cumulative Impacts Analysis Method":** The several listed future projects completely ignored the ever-increasing noise load from aircraft overhead (FAA- or DOD-related projects, individual projects). It also omitted the Cal Black Memorial Airport planned noise impacts.

5. Page 200-201: **"Soundscapes": (1)** As for understanding the "audibility calculations" cited on p. 200, *what is the "human threshold of hearing" assumed for the watercraft-specific frequencies?* **(2)** Also, on p. 201, why isn't noise analysis also provided for the PWC *peak month of September* (when PWC's peak at 38% and other watercraft decline to 62%.) *Please provide this data.* (Reference: Tables 16 on p. 162, and Table 11 on P. 102.)

6. Page 201: **"Impact Threshold Definitions:** Regarding the paragraph on "Negligible", there appears a *major error* because there is no reference to the *aircraft noise* contribution. It is likely not negligible in many areas of the Park. Furthermore, these definitions all appear meaningless and ultimately unacceptable as stated. Non-quantified terms ("low levels", "mostly", "predominate", "rarely", "medium levels", "infrequently", "short durations", "high levels", "occasionally", often", "medium duration", "almost all", and "extended periods") are all ultimately ephemeral and only *qualitative*. Hence, they are subject to arbitrary and capricious interpretation in rulemaking and/or determinations as to significant impact.

7. Page 202-206: **"Impairment":** Again, terms like "major levels", "frequently", and "extended periods" are not defined quantitatively. *Therefore, the definition itself is so impaired as to risk arbitrary and capricious application.*

8. P. 204: Irrespective of the comparison with "suburbs at night", a noise level averaging 30 dB at 0.6 miles may be excessively audible where the ambient is only 13 dB. There further is no evidence of application of "Robinson's equation" to factor in the "variable noise level" (discussed above.)

9. P. 205: Please provide quantitative calculations – with precise minimum thresholds – that would yield "moderate adverse effect." (Comparisons with noise averages of urban or residential areas are gratuitous and distracting. They are not really relevant to Park/Wilderness. The NPS has often criticized the FAA for such comparisons re a Park. Please recall, the audibility at GCNRA begins at 13 decibels.) *Also, aircraft are not factored in anywhere amidst these calculations.*

10. P. 206: **"Impairment Determination":** This section's concluding determination is not supported with application of reasoned, *quantitative thresholds*. **KEY POINT:** ***Thus the NPS' required determination as to soundscape "impairment" is fatally flawed as being likely arbitrary and capricious.***

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11. P.208: (Re the last two sentences: "Alternative A" vs. "Alternative C" comparison): (1) *What would be the per cent time audible for PWC's under "Alternative A", and, correspondingly, what would be that time specifically for "Alternative C"?"* Also, (2) *What would be the "Median Quiet Interval" for each?*

12. P. 209: **"Cumulative Effects"**. There has been no consideration of increasing numbers of audible aircraft operations out to 2015, which would quite possibly change the overall conclusion.

13. P. 210: **"Conclusion"**: Similarly, there has been no consideration of rising aircraft noise impacts out to 2015. The conclusion also suffers from lack of quantitative underpinning (precise thresholds) for determining "minor adverse effects" or "moderate adverse effects".

14. **NOISE STUDY** (HMMH): To provide a more complete soundscape analysis, data should be obtained from locations nearby to sites 1-4, but about one to two miles in from the shore, where PWC/boat noise falls off to less than 1% of time audible. That way, the total aircraft contribution can be fully – not just partially – assessed. (*Table 2*'s four sites (see Noise Study) contains no such data, so do not represent the minimal noise baseline required for fully comprehending the watercraft free soundscape. The data appears adequate for obtaining the L90, but would not be adequate for assessing the full contribution of aircraft noise, owing to significant audible noise interference from the watercraft at all stated sites including Site 1.)

15. **KEY REQUEST (Noise Study):** Please provide the *Median Quiet Intervals* (as defined above) from data/figures from draft Noise Study Tables 2 and 4, and for Table 9 (using all noise sources not just aircraft) *for each site measured.*

16. **KEY REQUEST: (Final EIS):** Please provide Maps of "Flight Paths" over the four sites, similar to what was provided by the FAA in the January, 2001 SDEIS for "Cal Black Memorial Airport: Halls Crossing, Utah", listed as Fig IV. 9, "IFR Flight Paths for Cal Black Memorial Airport, June 3, 1998" (copy attached, of Page 4-24, that SDEIS). *This would help the reader grasp the typical daily distribution of the aircraft noise load on various sites within the Park.* The maps chosen would be based on (1) the 24-hour day and (2) daylight hours only, when PWC's are also operating.

17. **AIR AND WATER POLLUTION:** Others are addressing this issue in detail. We simply re-assert here: many jet skis are propelled by small, two-stroke engines – pollution powerhouses that are among the filthiest machines around. Off-road vehicles like jet skis pollute every environment they enter, expelling 20-30% of their oil and gasoline, unburned, into the air and water

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For example, one jet ski driven for one 8-hour period emits the same amount of pollution as a car driven for 1,000 miles. Unburned fuel contains many toxic compounds, including benzene, toluene, xylene, and the extremely persistent methyl tertiary butyl ether (MTBE), a suspected human carcinogen.

Thank you at the Park Service for considering these comments in detail, and for the opportunity to make them.

Sincerely yours,

Dick Hingson

Dick Hingson, Chair
Noise subcommittee of
The Sierra Club – Recreation Issues Committee
[redacted]

National Headquarters of Sierra Club:
[redacted]

Attachment: *"Flight Paths"* Chart (from FAA "Cal Black Memorial Airport DSEIS", January, 2001, p.4-24)

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page 1 of 1

From: Jim McCarthy [redacted]
Sent: Wednesday, November 27, 2002 6:04 AM
To: GLCA@den.nps.gov
Subject: PWC on Powell

To: Glen Canyon National Recreation Area, National Park Service, GLCA@den.nps.gov

From: Grand Canyon Chapter of the Sierra Club

Subject: Public Comments re Personal Water Craft on Lake Powell Reservoir

Date: 27 November 2002

Arizona's Grand Canyon Chapter of the Sierra Club, with its 12,000 members, respectfully offers the following comments regarding the use of personal water craft (PWC) on Lake Powell Reservoir.

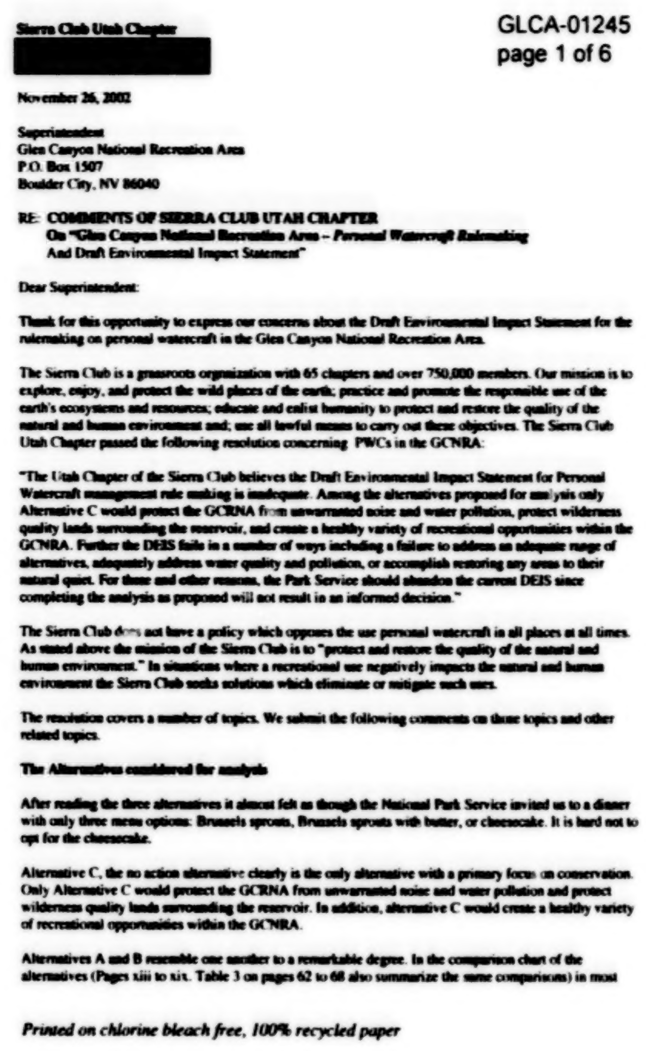
Natural quiet is an important resource in units of the National Park System including Glen Canyon National Recreation Area. Accordingly, the Grand Canyon Chapter of the Sierra Club would supports a DEIS alternative that would allow personal watercraft in certain areas but would reserve most other areas to be free from PWC.

The chapter supports addition of a new alternative that would include areas free from PWC, especially in bays and coves, and within audible distance of wilderness areas. None of the NPS alternatives, except the no-PWC alternative, would protect the recreation area adequately.

Because of the exhaust emissions of two cycle engines, the Chapter supports only the use of best available emissions technology four-cycle engines on the reservoir.

Jim McCarthy, Chapter Vice Chair

[redacted]



Sierra Club Utah Chapter
[redacted]

November 26, 2002

Superintendent
Glen Canyon National Recreation Area
P.O. Box 1507
Boulder City, NV 86040

RE: **COMMENTS OF SIERRA CLUB UTAH CHAPTER**
On "Glen Canyon National Recreation Area – *Personal Watercraft Rulemaking*
And Draft Environmental Impact Statement"

Dear Superintendent:

Thank for this opportunity to express our concerns about the Draft Environmental Impact Statement for the rulemaking on personal watercraft in the Glen Canyon National Recreation Area.

The Sierra Club is a grassroots organization with 65 chapters and over 750,000 members. Our mission is to explore, enjoy, and protect the wild places of the earth; practice and promote the responsible use of the earth's ecosystems and resources; educate and enlist humanity to protect and restore the quality of the natural and human environment and; use all lawful means to carry out these objectives. The Sierra Club Utah Chapter passed the following resolution concerning PWCs in the GCNRA:

"The Utah Chapter of the Sierra Club believes the Draft Environmental Impact Statement for Personal Watercraft management rule making is inadequate. Among the alternatives proposed for analysis only Alternative C would protect the GCRNA from unwarranted noise and water pollution, protect wilderness quality lands surrounding the reservoir, and create a healthy variety of recreational opportunities within the GCNRA. Further the DEIS fails in a number of ways including a failure to address an adequate range of alternatives, adequately address water quality and pollution, or accomplish restoring any areas to their natural quiet. For these and other reasons, the Park Service should abandon the current DEIS since completing the analysis as proposed will not result in an informed decision."

The Sierra Club does not have a policy which opposes the use personal watercraft in all places at all times. As stated above the mission of the Sierra Club is to "protect and restore the quality of the natural and human environment." In situations where a recreational use negatively impacts the natural and human environment the Sierra Club seeks solutions which eliminate or mitigate such uses.

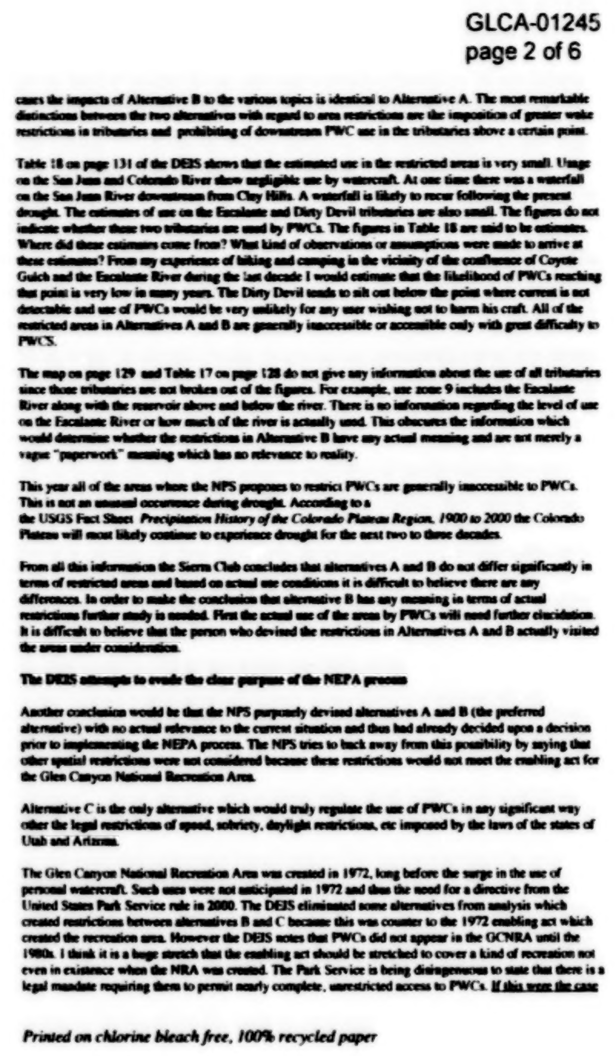
The resolution covers a number of topics. We submit the following comments on those topics and other related topics.

The Alternatives considered for analysis

After reading the three alternatives it almost felt as though the National Park Service invited us to a dinner with only three menu options: Brussels sprouts, Brussels sprouts with butter, or cheesecake. It is hard not to opt for the cheesecake.

Alternative C, the no action alternative clearly is the only alternative with a primary focus on conservation. Only Alternative C would protect the GCRNA from unwarranted noise and water pollution and protect wilderness quality lands surrounding the reservoir. In addition, alternative C would create a healthy variety of recreational opportunities within the GCNRA.

Alternatives A and B resemble one another to a remarkable degree. In the comparison chart of the alternatives (Pages xiii to xix. Table 3 on pages 62 to 68 also summarize the same comparisons) in most



cases the impacts of Alternative B to the various topics is identical to Alternative A. The most remarkable distinctions between the two alternatives with regard to area restrictions are the imposition of greater wake restrictions in tributaries and prohibiting of downstream PWC use in the tributaries above a certain point.

Table 18 on page 131 of the DEIS shows that the estimated use in the restricted areas is very small. Usage on the San Juan and Colorado River show negligible use by watercraft. At one time there was a waterfall on the San Juan River downstream from Clay Hills. A waterfall is likely to recur following the present drought. The estimates of use on the Escalante and Dirty Devil tributaries are also small. The figures do not indicate whether these two tributaries are used by PWCs. The figures in Table 18 are said to be estimates. Where did these estimates come from? What kind of observations or assumptions were made to arrive at these estimates? From my experience of hiking and camping in the vicinity of the confluence of Coyote Gulch and the Escalante River during the last decade I would estimate that the likelihood of PWCs reaching that point is very low in many years. The Dirty Devil tends to silt out below the point where current is not detectable and use of PWCs would be very unlikely for any user wishing not to harm his craft. All of the restricted areas in Alternatives A and B are generally inaccessible or accessible only with great difficulty to PWCS.

The map on page 129 and Table 17 on page 128 do not give any information about the use of all tributaries since those tributaries are not broken out of the figures. For example, use zone 9 includes the Escalante River along with the reservoir above and below the river. There is no information regarding the level of use on the Escalante River or how much of the river is actually used. This obscures the information which would determine whether the restrictions in Alternative B have any actual meaning and are not merely a vague "paperwork" meaning which has no relevance to reality.

This year all of the areas where the NPS proposes to restrict PWCs are generally inaccessible to PWCs. This is not an unusual occurrence during drought. According to a
the USGS Fact Sheet *Precipitation History of the Colorado Plateau Region, 1900 to 2000* the Colorado Plateau will most likely continue to experience drought for the next two to three decades.

From all this information the Sierra Club concludes that alternatives A and B do not differ significantly in terms of restricted areas and based on actual use conditions it is difficult to believe there are any differences. In order to make the conclusion that alternative B has any meaning in terms of actual restrictions further study is needed. First the actual use of the areas by PWCs will need further elucidation. It is difficult to believe that the person who devised the restrictions in Alternatives A and B actually visited the areas under consideration.

The DEIS attempts to evade the clear purpose of the NEPA process

Another conclusion would be that the NPS purposely devised alternatives A and B (the preferred alternative) with no actual relevance to the current situation and thus had already decided upon a decision prior to implementing the NEPA process. The NPS tries to back away from this possibility by saying that other spatial restrictions were not considered because these restrictions would not meet the enabling act for the Glen Canyon National Recreation Area.

Alternative C is the only alternative which would truly regulate the use of PWCs in any significant way other the legal restrictions of speed, sobriety, daylight restrictions, etc imposed by the laws of the states of Utah and Arizona.

The Glen Canyon National Recreation Area was created in 1972, long before the surge in the use of personal watercraft. Such uses were not anticipated in 1972 and thus the need for a directive from the United States Park Service rule in 2000. The DEIS eliminated some alternatives from analysis which created restrictions between alternatives B and C because this was counter to the 1972 enabling act which created the recreation area. However the DEIS notes that PWCs did not appear in the GCNRA until the 1980s. I think it is a huge stretch that the enabling act should be stretched to cover a kind of recreation not even in existence when the NRA was created. The Park Service is being disingenuous to state that there is a legal mandate requiring them to permit nearly complete, unrestricted access to PWCs. If this were the case this NEPA process and rule making would be moot and the outcome a foregone conclusion. This is counter to the heart of NEPA. The decision which this EIS will lead to, if the FEIS does not very tremendously from the DEIS, is truly between no restrictions and a complete ban.

Since PWCs were not part of the recreational mix at the time of the enabling legislation it does not follow that PWCs are consistent with the enabling legislation. It is not clear that restricting or eliminating PWCs is inconsistent with the enabling legislation. Legislation which is permissive does not necessarily *require* that activities be permitted. Since PWCs do negatively impact other users and other uses such as wilderness there is no requirement within the enabling legislation which requires an unforeseen use to be allowed.

The DEIS fails to consider an adequate range of alternatives

The Sierra Club concludes that the DEIS does not consider an adequate range of alternatives. Two alternatives at the extremes of the possibilities do not comprise an adequate range of alternatives. NEPA and regulations implementing it require agencies to consider a range of reasonable alternatives to an agency action in preparing environmental review documents. NEPA requires agencies to: Study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources. 42 U.S.C. 4332(2)(E). Council on Environmental Quality ("CEQ") regulations implementing NEPA and the courts make clear that the discussion of alternatives is "the heart" of the NEPA process. 40 C.F.R. 1502.14. In order to "sharply define[e] the issues and provide[e] a clear basis for choice among options by the decision maker and the public," environmental documents must explore and evaluate "all reasonable alternatives." Id.

User conflicts given cursory analysis

As noted the reservoir within the GCRNA is 186 miles long. This gives a sense of immensity when considering recreational activities on the reservoir. However the reservoir is often very narrow with both sides readily visible. The desirable types of recreation and the accompanying noise level will very according to the width of the reservoir in any particular location and the width of any side canyon or tributary used for recreation.

Alternative C provides for recreational opportunities which would be negatively impacted by Alternatives A and B. PWCs detract from kayaking, canoeing, family boating excursions, fishing, pedal boating, and destroy the natural quiet that visitors expect when camping or picnicking. The noise reverberates in canyons which further destroys the natural quiet of the area. Hikers can often hear the whine of PWCs well away from the reservoir. Essentially all these recreational activities would be negatively impacted by the preferred alternative with the only benefit being to maintain a single recreational opportunity.

Table 21 on page 134 clearly shows there is a perception of conflict between the users of PWCs and users of other watercraft. PWC users in every case rated the conflicts arising from PWCs lower than other watercraft users. Most telling were the responses concerning restrictions on PWCs. In this case the users of PWCs gave significantly less desirability to restrictions on PWCs. Table 21 gives responses for three possible restrictions on PWCs: restrict personal watercraft to designated areas only, limit [the] number of personal watercraft allowed on [the] lake at any one time, or prohibit personal watercraft on the lake. PWC users rated these restrictions in importance (based on a scale of 1 to 5) at 2.2, 2.1, and 1.5 respectively. Other watercraft users responses were 3.3, 2.9 and 2.3 respectively. This indicates a huge difference in interpretation to the value of PWCs to the water recreation experience in the GCNRA and the desirability of PWCs to the users of the reservoir. It also means that PWC users have an unrealistic view of their impact to others. Education efforts will only be effective to the degree that PWC users acknowledge their impact on other users.

Additionally, the number of non-motorized watercraft using the GCNRA seems ridiculously small. There are a few possibilities to explain this. Perhaps the GCNRA lacks the visual qualities which would attract kayakers, canoeists, or paddle craft. Or it could be that recreation on the reservoir is so heavily weighted towards motorized use that it is no longer desirable for quieter, human powered recreation.

The National Park Service needs to consider the balance of recreational opportunities and whether or not it is providing an adequate range of recreational opportunities. In terms of this particular EIS the NPS needs to determine if PWCs contribute to the lack of human centered recreation. This could be difficult to assess but it could be attempted. The GCNRA could review records for any organized permitted kayak or canoe trips on the reservoir. Such groups could be contacted and given a survey about the impacts of motorized use on their experiences and the effects of PWCs in particular. In addition the NPS could contact user groups of kayakers and canoeists to survey attitudes towards encountering PWCs during recreational excursions.

The National Park Service needs to analyze the balance of recreational opportunities. Simply maximizing all recreational styles does not meet the mandate of the enabling act for the GCNRA. Some styles of recreation will always be impaired by other styles of recreation. PWCs would probably prove to be the most severe degrader of other recreational experiences. By allowing PWCs essentially unlimited access to Reservoir Powell, the NPS is distorting the range and value of some recreational uses.

Table 3 states," Visitors who did not use personal watercraft would generally perceive minor to moderate, short- term benefits. These benefits would decline to negligible in the long term. Other cumulative effects would be negligible." There does not seem to be any rationale for this conclusion. Why does the NPS conclude there would only be a perception of "moderate, short-term benefits" which would decline to "negligible in the long term?" What research yielded such a result? At one point the NPS asserts that there would be approximately a 25% decrease in watercraft if PWCs are banned from the reservoir. This would be dramatic in some areas. The NPS at one point concludes that this drop in watercraft would eventually disappear and that former PWC users would soon return with other watercraft. This requires that the NPS knows that all of the PWC users wished only to recreate in the GCNRA and would soon replace the PWCs with other watercraft and return.
This totally discounts that some if not most PWC users choose primarily the form of recreation and only secondarily choose where to recreate. It is entirely more likely that PWC users will seek sites where such use is permitted.

The DEIS also notes that the PWC is often only one the watercraft that arrives with group of users. Power boat users and house boat users are also PWC users. From reading the DEIS it is not clear that users of more than one kind of watercraft do not get counted twice for some analyses. If half of all PWCs are part of a group of craft used by a single group or set of users, then the results of banning PWCs may result in fewer motorized watercraft users returning since half of the PWC users were already using other watercraft on the reservoir.

On page 67 in Table 3 the DEIS, "In the short term and long term, cumulative effects would be adverse and moderate." This describes the socioeconomic impact of Alternative C. If this is true then why would the NPS assume that motorized users would soon return to the same level, that a reduction or elimination of PWCs would have only a temporary change in the level of motor boat use? There is an error in logic here. At one place the NPS suggests that the drop in motorized watercraft use would be transient. But here the NPS suggests the impacts to the socioeconomics of the area would be "adverse and moderate" in the short term and the long term. If recreational users return to a pre-ban level in a short time, then why would adverse, moderate effects persist into the long term?

Wilderness

Half of the shoreline of the reservoir is managed essentially as wilderness. Alternatives A and B are both likely to adversely impact the qualities of solitude and a natural ambience for these wilderness areas. The NPS must seek an alternative which recognizes the importance of wilderness lands and manages those lands appropriately. We will propose some alternatives which should serve the purpose of preserving the wilderness qualities found within the GCNRA. Perhaps this could form the focus of one alternative to be analyzed.

Noise pollution and natural quiet

The Sierra Club Utah Chapter incorporates the comments submitted by Dick Hingson for the National Recreation Committee of the Sierra club. The focus of returning natural quiet to a significant portion of the reservoir should be included in the analysis of alternatives. Specifically sound determinations and measurements used for a baseline should come from an area where PWCs are prohibited. The area should also be free from all motorized recreation and have no audible air traffic. Additionally you should have studied noise levels in the major tributaries as well as narrow canyons and coves. A useful comparison would be the resonance or reverberation of noises within confined spaces. The NPS should study the travel of noise through canyon systems including the distance noise may travel through confined canyons. Much more information is needed to reach an informed decision.

The NPS should also assess the time intervals between the passage of watercraft and the resultant disturbance of natural quiet. The time period between noise events should be sufficient to permit a quiet and contemplative experience of the grandeur found among the stone walls and slickrock gardens in the Glen Canyon National Recreation Area. The NPS should establish standards which tend to restore natural quiet and create zones where natural quiet predominates.

Table 12 on page 104 includes some valuable information which should guide the creation of reasonable alternatives for a decision which is not uninformed and thus arbitrary and capricious. The table shows that the noise levels within 15 meters of shore for all watercraft is above 75 dBA. In situations where it is not possible to operate watercraft further than 15 meters from shore this noise level is unacceptable. You should also clarify whether or not this situation violates Utah State law. The intent of Utah law is to protect the shoreline from unwarranted noise levels. Whether or not the law can be strictly interpreted to ban use from narrow canyons and coves, the sentiment behind the law should be recognized by the NPS.

Table 12 indicates that Alternatives A and B have not adequately addressed use of watercraft in the tributaries, side canyons and coves of the reservoir.

Water pollution and water quality

Only Alternative C prohibits water pollution with fuel discharged into the reservoir from the two stroke engines currently used in manufacturing PWCs. The DEIS notes other laws require the fleet of watercraft manufactured after 2006 should include at least 75% of watercraft meet low emission standards. The DEIS states that 12% of PWCs used on the reservoir already complied with low emission standards. The projection of rapidly progressing towards cleaner PWCs in the GCNRA seems hopelessly optimistic. The manufacturing of lower emission PWCs does not necessarily equate with higher usage of low emission PWCs in any particular location. If fact locations which do not tightly restrict the use of two stroke engines may be burdened with an over representation of the polluting PWCs.

Water quality and pollution are complex issues. The Sierra Club is not interested in seeing the human and natural environment adversely impacted by the use of unnecessarily polluting recreational watercraft.

The Bluewater Network and Living Rivers will submit more comprehensive comments on water quality. To the extent that those comments reflect Sierra Club position or policy, the Utah Chapter supports those organizations.

Alternatives or issues which need to be analyzed

As noted above the DEIS does not contain a reasonable range of alternatives. Clearly it is the duty of the National Park Service to analyze a range of alternatives which result in an informed decision. In order to accomplish this, the Sierra Club Utah Chapter proposes the following issues be included in the EIS.

1. The 50% of the shoreline which is managed as wilderness should be given special consideration in the EIS. This should include restrictions of PWCs where they are likely to impair the wilderness experience of GCNRA visitors. By requesting this issue be analyzed we are arguing for a more balanced approach to recreation within the GCNRA. The enabling act should be interpreted to mean that recreation should be allowed in a balanced manner and not in a manner which leaves a single recreational pursuit unrestrained. The enabling act does not deny the NPS discretion in how to manage recreation.

2. An alternative which looks at a complete prohibition of PWCs in the four tributaries should be analyzed.

3. An alternative which looks at a prohibition of PWCs from the tributaries, narrow canyons and small coves should be analyzed.

4. The use of best available technology for PWC engines should be analyzed. This would include a ban of PWCs with the most common type of two stroke engines currently in use. The requirement that low emission engines be used should be analyzed.

5. PWCs should be analyzed within the framework of all current recreational uses. The analysis should also consider means to encourage low impact recreation such as kayaks and canoes in the GCNRA. While this should be analyzed for its own merits, the unrestricted use of PWCs with cumulative impacts from other motorized watercraft may be unfairly destroying the qualities which would bring human powered recreation into the balance of recreational opportunities.

These and other issues need to be analyzed fully and with a hard look.

The GCNRA should withdraw the current DEIS

The current DEIS fails to meet the requirements of NEPA in several ways. It is hard to believe that the defects of this DEIS can be rectified in continuing analysis along the lines used for the DEIS. In preparing an EIS the NPS must "provide full and fair discussion of significant environmental impacts and *shall inform decisionmakers and the public of the reasonable alternatives* which would avoid or minimize adverse impacts or enhance the quality of the human environment." 40 CFR Sec 1502.1 (emphasis added). The DEIS fails to meet the standards required by NEPA for completing an EIS and for this reason the DEIS should be withdrawn and a new DEIS with a reasonable set of alternatives should be proposed. If the FEIS attempts to rectify the inadequacies of the DEIS then decisionmakers and the public will find themselves attempting to consider and comment on a number of completely new issues and/or alternatives. This removes a step in completing an informed decision. Essentially the DEIS and FEIS will differ so immensely that both could qualify as a draft environmental impact statement rather than the result of deliberation and improving upon a reasonable range of alternatives considered in a draft.

Thank you for this opportunity to comment on the Draft Environmental Impact Statement for the Personal Watercraft Rule-making for the Glen Canyon National Recreation Area.

Sincerely,

Wayne Y. Hoskisson

Wayne Y. Hoskisson, Publiclands Chair
Sierra Club Utah Chapter

GLCA-01239
page 1 of 8

USA-ALL
Utah Shared Access Alliance

[redacted]

Kitty L. Roberts, Superintendent
Glen Canyon National Recreation Area
PO Box 1507
Page, AZ 86040

SENT VIA E-MAIL AND U.S. MAIL

RE: Comments on the Draft Environmental Impact Statement, Personal Watercraft Rule-Making Glen Canyon National Recreation Area Arizona and Utah

Dear Superintendent Roberts,

The Utah Shared Access Alliance represents those who choose or are required to use vehicles for access and recreation on public lands and National Forests in Utah. A substantial percentage of our members and supporters are owners of PWCs and visitors to the Glen Canyon National Recreation Area (Lake Powell).

Thank you for the opportunity to comment on the DIES. Please incorporate our comments into the record, and carefully consider our recommendations.

If you have any questions, or require clarification on any item, please do not hesitate to call.

Thank you,

Brian Hawthorne
Utah Shared Access Alliance
[redacted]

GLCA-01239
page 2 of 8

General Comments:

It is unfortunate that substantial National Park Service resources have been squandered on this rulemaking process. Had the NPS not entered into and ill-advised and unnecessary settlement with the Bluewater Network in their suit attacking PWC users, this entire process would have been superfluous and time and effort devoted hereto could have been used more productively addressing user needs and improving the environment at Lake Powell.

This rulemaking process is another example of how far the National Park Service has strayed from its Congressional mandate[1] The entire process, including the analysis of and conclusions drawn from the environmental study, shows a bias against the legitimate needs of the majority of the users of public lands, National Parks and Recreation Areas.

From the perspective of many of our members and supporters, this rulemaking is part of the sad legacy of the Clinton/Gore Administration that spared no effort in catering to radical special interest group. The Bluewater Network makes no secret about its goal of eliminating all motorized recreation and access from public lands and facilities. Many of our members finds the Bluewater Network's stated goal in this case somewhat disingenuous in that it seeks to "protect" the environment of Lake Powell while its ideological sister organization, the Sierra Club, seeks to destroy it.

The vast majority of our members and supporters, irrespective of whether or not they own PWC's, believe that motorized recreation should continue to be the dominant use at Lake Powell. They know that from their very inception, PWC's wound their way up and down the many narrow canyons allowing people access to places too small for larger craft. They firmly believe that if there is any place on earth where PWC use is appropriate and proper, it is Lake Powell.

There is nothing in the DEIS that indicates PWC use is the source of any substantial problems in any of the areas studied. Quite to the contrary, in some areas their impacts are significantly under represented compared to other watercraft. Thus there can be no question that Alternative A is the only rational choice. The selection of Alternative B would be arbitrary and capricious. Alternative C is so extreme as to be beyond any serious consideration. For these and other reasons, the Utah Shared Access Alliance strongly urges the Park Service to adopt Alternative A.

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[1] Glen Canyon National Recreation Area was established in 1972 (Public Law 92-593) "to provide for public outdoor recreation use and enjoyment of Lake Powell and lands adjacent thereto . . . and to preserve scenic, scientific, and historic features contributing to public enjoyment of the area." The recreation area's primary management objective, as established in the general management plan (NPS 1979a), is "to manage the recreation area so that it provides maximal recreational enjoyment to the American public and their guests."

Specific Comments and Suggestions:

According to the settlement stipulation, the NPS was required to do an analysis of PWC impacts in the areas of water quality, soundscapes, wildlife, wildlife habitat, shoreline vegetation, visitor conflicts, and visitor safety. Our specific comments and suggestions address these issues.

RE: Water Quality

Comment:
The DIES claims that carbureted 2 cycle engines discharge "up to" 30% of their fuel/oil into the water (California Environmental Protection Agency, ARB, 1999). No information was provided as to the mean discharge.

Suggestion:
The analysis should note that the mean discharge is likely to be much less than the 30% figure.

Comment:
On Page 16 the DEIS expresses concern about discharges of methyl tertiary-butyl ether, also known as MTBE into the water. The NPS should have disclosed that this known pollutant is present in fuel only as a result of a Federal Government mandate and as such should not be considered a factor in the current analysis. The DIES should have disclosed whether or not MTBE is added to fuel sold at Lake Powell marinas or adjoining service stations. This problem, if any, would be associated with fuel brought in by users from mandate areas such as Los Angeles. The DIES also should have disclosed that (fortunately) this fuel additive is being phased out through increased us of Ethanol.

Comment:
The DIES states:

> Page 83: "Away from areas of high boat traffic, observable evidence of hydrocarbon pollution usually disappears".
>
> Page 86: "...the average useful "life" of a 2cycle personal watercraft is 9 years (CARB 1998b). As a result, by around 2015, most of the personal watercraft used on Lake Powell will have low-emission engines. Therefore, water quality conditions associated wit the use of personal watercraft and other motorcraft will improve, regardless of management action selected".
>
> Page 174: "Under the worst-case conditions described above, the chemical changes to water quality sometimes would be detectable but would be well below water quality standards or criteria and with historical or desired water quality conditions. *Most of the time, as demonstrated by the summer 2001 sampling, the chemical changes to water quality would not be detectable with current analytical techniques.*" (Emphasis added)

The DEIS thus found no impact on water quality under the worst scenario of current use levels. In addition, any impacts are that may exist will dwindle each subsequent year as the fleet of PWC become more fuel-efficient and less polluting.

It is clear from the DIES that no impetus or justification for restricting PWC use can be found related to the issue of water quality.

Suggestion:
In light of the fact the environmental study shows no detectable change to water quality, we recommend the Park Service adopt Alternative A.
Air Quality

RE: Air Quality

Comment:
Frankly, the same comments as above can be made in regard to air quality.

It is clear from the DIES that no impetus or justification for restricting PWC use can be found related to the issue of water quality.

Suggestion:
In light of the fact the environmental study shows no detectable change to water quality, we recommend the Park Service adopt Alternative A.

RE: Soundscape

Comment:
The DIES asserts that many recreationists who do not use PWC's find the noise from these vessels to be "annoying". It should be noted that discriminatory special interest groups have taught non-motorized recreationists that any noise from motorized recreation is unacceptable. Should PWC's be eliminated, we can safely predict they would just complain about the remaining powerboats.

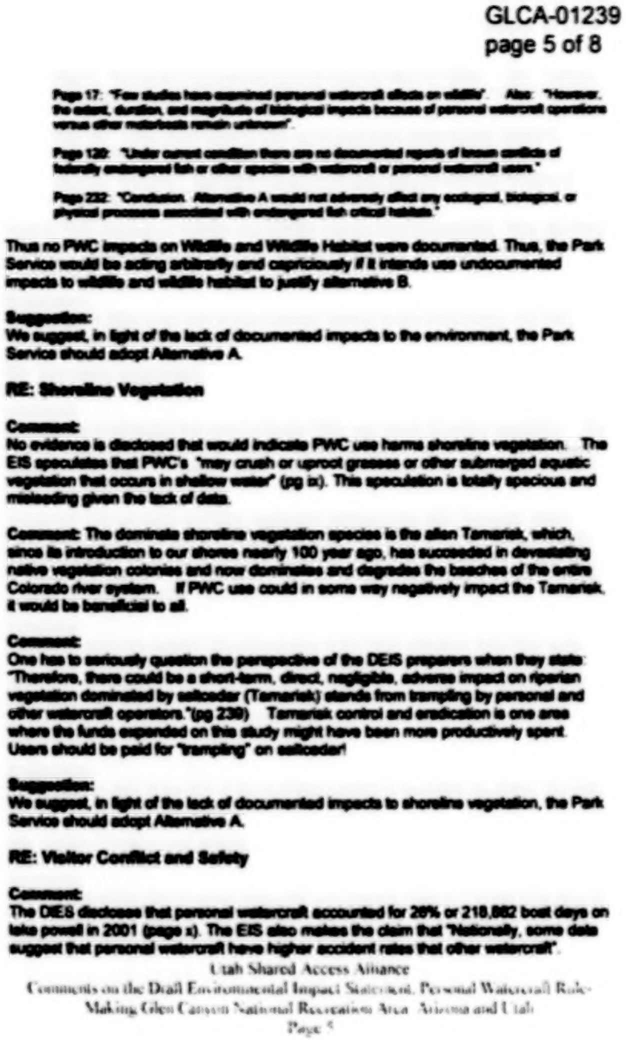
Comment:
The sound standard at the Glen Canyon National Recreation Area is 82 decibels at 82 feet at full acceleration, a standard that is met by every unmodified PWC. If particular modified PWC's exceed this limit, then they should be cited and/or removed from the waters of Lake Powell. This standard can, and should be met under Alternative A.

The Park Service is acting arbitrarily and capriciously if it intends use excessive noise to justify alternative B. The current standard can, and should be met under Alternative A. If the Park Service determines the need to change that standard, they may, but such changes should be applied to all watercraft on the lake.

Suggestion:
The Park Service should work with multi jurisdictional Law Enforcement in order to enforce existing sound standards.

RE: Wildlife and Wildlife Habitat

Comment:
The DEIS tell us:



> Page 17: "Few studies have examined personal watercraft effects on wildlife". Also: "However, the extent, duration, and magnitude of biological impacts because of personal watercraft operations versus other motorboats remain unknown".
>
> Page 120: "Under current condition there are no documented reports of known conflicts of federally endangered fish or other species with watercraft or personal watercraft users."
>
> Page 232: "Conclusion. Alternative A would not adversely affect any ecological, biological, or physical processes associated with endangered fish critical habitats."

Thus no PWC impacts on Wildlife and Wildlife Habitat were documented. Thus, the Park Service would be acting arbitrarily and capriciously if it intends use undocumented impacts to wildlife and wildlife habitat to justify alternative B.

Suggestion:
We suggest, in light of the lack of documented impacts to the environment, the Park Service should adopt Alternative A.

RE: Shoreline Vegetation

Comment:
No evidence is disclosed that would indicate PWC use harms shoreline vegetation. The EIS speculates that PWC's "may crush or uproot grasses or other submerged aquatic vegetation that occurs in shallow water" (pg ix). This speculation is totally specious and misleading given the lack of data.

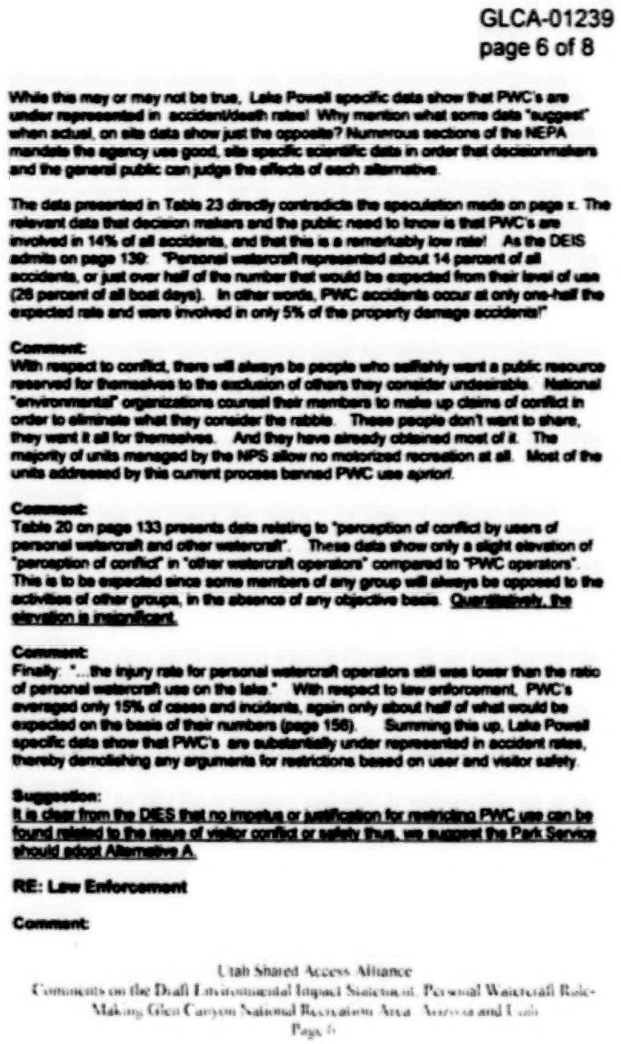
Comment: The dominate shoreline vegetation species is the alien Tamarisk, which, since its introduction to our shores nearly 100 year ago, has succeeded in devastating native vegetation colonies and now dominates and degrades the beaches of the entire Colorado river system. If PWC use could in some way negatively impact the Tamarisk, it would be beneficial to all.

Comment:
One has to seriously question the perspective of the DEIS preparers when they state: "Therefore, there could be a short-term, direct, negligible, adverse impact on riparian vegetation dominated by saltcedar (Tamarisk) stands from trampling by personal and other watercraft operators."(pg 239) Tamarisk control and eradication is one area where the funds expended on this study might have been more productively spent. Users should be paid for "trampling" on saltcedar!

Suggestion:
We suggest, in light of the lack of documented impacts to shoreline vegetation, the Park Service should adopt Alternative A.

RE: Visitor Conflict and Safety

Comment:
The DIES discloses that personal watercraft accounted for 26% or 218,882 boat days on lake powell in 2001 (page x). The EIS also makes the claim that "Nationally, some data suggest that personal watercraft have higher accident rates that other watercraft".



While this may or may not be true, Lake Powell specific data show that PWC's are under represented in accident/death rates! Why mention what some data "suggest" when actual, on site data show just the opposite? Numerous sections of the NEPA mandate the agency use good, site specific scientific data in order that decisionmakers and the general public can judge the effects of each alternative.

The data presented in Table 23 directly contradicts the speculation made on page x. The relevant data that decision makers and the public need to know is that PWC's are involved in 14% of all accidents, and that this is a remarkably low rate! As the DEIS admits on page 139: "Personal watercraft represented about 14 percent of all accidents, or just over half of the number that would be expected from their level of use (26 percent of all boat days). In other words, PWC accidents occur at only one-half the expected rate and were involved in only 5% of the property damage accidents!"

Comment:
With respect to conflict, there will always be people who selfishly want a public resource reserved for themselves to the exclusion of others they consider undesirable. National "environmental" organizations counsel their members to make up claims of conflict in order to eliminate what they consider the rabble. These people don't want to share, they want it all for themselves. And they have already obtained most of it. The majority of units managed by the NPS allow no motorized recreation at all. Most of the units addressed by this current process banned PWC use apriori.

Comment:
Table 20 on page 133 presents data relating to "perception of conflict by users of personal watercraft and other watercraft". These data show only a slight elevation of "perception of conflict" in "other watercraft operators" compared to "PWC operators". This is to be expected since some members of any group will always be opposed to the activities of other groups, in the absence of any objective basis. Quantitatively, the elevation is insignificant.

Comment:
Finally: "...the injury rate for personal watercraft operators still was lower than the ratio of personal watercraft use on the lake." With respect to law enforcement, PWC's averaged only 15% of cases and incidents, again only about half of what would be expected on the basis of their numbers (page 156). Summing this up, Lake Powell specific data show that PWC's are substantially under represented in accident rates, thereby demolishing any arguments for restrictions based on user and visitor safety.

Suggestion:
It is clear from the DIES that no impetus or justification for restricting PWC use can be found related to the issue of visitor conflict or safety thus, we suggest the Park Service should adopt Alternative A.

RE: Law Enforcement

Comment:

On page xix of the summary, under Alternative C, the EIS makes the following statement:

> "Short-term, direct, beneficial effects would occur because the ban of personal watercraft would eliminate about 15 percent of law enforcement cases. In the long term, visitors returning with other craft would have a direct, negligible to minor, adverse effect."

This statement is very troubling because it classifies visitors to Lake Powell as an "adverse effect".

Questions:

- Is this the official NPS assessment of its constituents?
- What is the benefit of eliminating 20% of Lake Powell users in order to realize a 15% reduction in law enforcement cases?

Comment:
It is perhaps surprising that the EIS did not extrapolate in order to advocate a 100% reduction in users as beneficial!

Suggestion:
It is clear from the DIES that no impetus or justification for restricting PWC use can be found related to the issues surrounding law enforcement, thus, we suggest the Park Service adopt Alternative A.

Comments Regarding Alternative B:

Comment:
Alternative B would deny operators of personal watercraft access to the important areas of the full pool shoreline of Lake Powell. In times of low lake level, much of the 25-mile section of the Colorado River channel proposed for closure is flowing water that provides a novel and unparalleled experience for PWC users. This conflicts with the agency's mandate to maximize recreational use of the recreation area.

Comment:
On page 69 the DEIS states that:

> "However, Alternative A would not ensure aesthetically pleasing surroundings because it would allow personal watercraft users in areas frequented by recreationists engaged in more reflective outdoor activities".

This statement well illustrates the NPS's unrelenting bias towards its muscle- powered users and discrimination towards of all others. Muscle-powered users seem be endowed by the NPS with superior rights that always supercede other park visitors.

Comment:
The DEIS ignores the fact that muscle-powered users have the vast bulk of the Colorado river system plus the entire Grand Canyon available for their exclusive use. This information would have helped decisionmakers and the general public evaluate alternatives. We point out that sharing this relative short section, which is regularly inundated to become flat water at high lake levels should not be too much of a burden to those who seek a "primitive" or non-motorized recreational experience. The same comments apply to the affected sections of the Escalante, Dirty Devil, and San Juan rivers.

Alternative B unfairly denies the public the use and enjoyment of these areas. The decision to adopt Alternative B, in light of the lack of documented harm to the environment, is arbitrary and capricious and contrary to the management mandate contained in the enabling legislation.

Comment:
The data presented in Table 18 on page 131 of the DEIS indicate very low usage of these areas by both PWC's and other motorcraft. For example, in the Colorado river upstream from Sheep Canyon, the table indicates less than one, even in the high use season. We are left to wonder why such low numbers would require any attention or regulation at all. The fact that the restrictions under Alternative B would apply only to PWC's and not to other power craft makes them arbitrary and capricious and utterly lacking in any sense whatsoever.

Comment:
The restriction to wakeless speed under Alternative B applies for PWC's, but not for other power craft in some of these areas also defies logic. PWC wakes are negligible compared to those of the larger boats whose operations would be allowed to continue.

Suggestion:
For these and other reasons, the Utah Shared Access Alliance strongly urges the Park Service to adopt Alternative A.

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Glen Canyon National Recreation Area
Box 1507
Page, Arizona 86040

Dear Interested Party:

Thank you for your interest regarding the future use of personal watercraft at Glen Canyon National Recreation Area. Enclosed is the draft environmental impact statement for the personal watercraft rule-making, which evaluates three alternatives for managing the use of personal watercraft at the recreation area. Two alternatives would allow personal watercraft use under defined conditions. The third alternative would eliminate personal watercraft use within the recreation area.

Under a special regulation, Alternative A would allow use identical to that before September 2002. Personal watercraft use would be authorized for all areas of the recreation area above Glen Canyon Dam except where use was prohibited by the *Superintendent's Compendium, 2002*.

Alternative B would allow personal watercraft use in the recreation area under a special regulation that included additional management restrictions. Personal watercraft use would be prohibited in portions of the Colorado, Escalante, Dirty Devil, and San Juan Rivers to increase protection of environmental values and reduce visitor conflict. To further reduce visitor conflict and improve visitor experience, speed restrictions would be imposed in additional areas of the Escalante and Dirty Devil Rivers. This alternative also includes enhancement of educational programs and materials, and the development of a monitoring program and lake management plan that would comprehensively consider all lake uses to manage the effects on resources by all watercraft. *

Under Alternative C, the no action alternative, all personal watercraft use within the recreation area would be prohibited, based on the 2000 National Park Service rule.

The potential environmental consequences of the actions were evaluated for each alternative. This included impacts on natural resources, cultural resources, visitor experience and safety, socioeconomic impacts, and management and operations.

If you wish to comment on the draft environmental impact statement, you may mail comments to Glen Canyon NRA, Attn: PWC DEIS, P.O. Box 1507, Page AZ 86040 or e-mail comments to GLCA@den.nps.gov. Please note that names and addresses of people who comment become part of the public record. If you wish us to withhold you name and/or address, you must state this prominently at the beginning of your comment. We will make all submissions from organizations, from businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses available for public inspection in their entirety. This draft environmental impact statement will be on public review for 60 days after the U.S. Environmental Protection Agency has accepted the document and published a notice of availability in the *Federal Register*. The final date for public comment will be posted on the recreation area website at www.nps.gov/glca/plan.htm. All review comments must be received by that time.

Sincerely,

Kitty L. Roberts
Superintendent

We believe Alt. B would
be the best management
and education program
for dealing with this
issue vis-a-vis impacts
to cultural resources.
Ann V. Howard 10/7/02
for Arizona State Historic Preservation Office

GLCA-00056
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From: + Duncan, Mark [redacted]
Sent: Monday, October 14, 2002 9:42 AM
To: GLCA@den.nps.gov
Subject: Glen Canyon NRA

10-14-02

I am sending this email for two reasons. First, I am a PWC user on Lake Powell and show every precaution and respect for this lake, and I teach my children these same qualities. They will someday be adults and enjoy this lake with there families and teach there children these same qualities.

I am also an elected official in the state of New Mexico, and understand how important it is to view ALL and I mean ALL sides of this issue. It would be totaly one sided to get rid of the pwc on a lake that was built with TAX dollars and operated today with tax dollars. If the enviro community doesn't like wave runners and powered boats than stay off this lake. If there are SOME and I mean some canyons that may be damaged, (how I don't know) than by all means close these off and only these.

Thank You

Mark Duncan
County Commission Chairman
San Juan County, New Mexico

##

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 300
DENVER, CO 80202-2466
Phone 800-227-8917
http://www.epa.gov/region08

DEC - 2 2002

Ref:EPR-N

Kitty L. Roberts, Superintendent
Glen Canyon National Recreation Area
P.O. Box 1507
Page, Arizona 86040

Re: Glen Canyon National Recreation Area:
Personal Watercraft Rule-Making DEIS,
CEQ # 020396

Dear Ms. Roberts:

In accordance with our responsibilities under the National Environmental Policy Act (NEPA), and Section 309 of the Clean Air Act, the Region 8 office of the Environmental Protection Agency (EPA) has reviewed the above-referenced Draft Environmental Impact Statement (DEIS). This DEIS describes the National Park Service's (NPS) proposed regulation which evaluates alternatives and strategies for the management of personal watercraft at Glen Canyon National Recreation Area (GCNRA).

The NPS analyzed three alternatives in this DEIS. Alternative A proposes continued use of personal watercraft identical to the management before September 15, 2002 (when a settlement between the NPS and Bluewater Network suspended the use of personal watercraft from the recreation area until a recreation area-specific regulation could be completed). Alternative B, the preferred alternative (also designated NPS's environmentally-preferred alternative), continues the use of personal watercraft with several additional management restrictions. Alternative C proposes the current ban on the use of personal watercraft.

While the NPS has covered a wide range of issues and included significant analysis, EPA has three major concerns with the analysis, summarized below.

1) The water quality section of the Final EIS (FEIS) should clearly establish whether activities regulated by the NPS are violating, or have the potential to violate, State-adopted, EPA-approved water quality standards under the Federal Clean Water Act;

2) The DEIS does not adequately address strategies for the management of personal watercraft at GCNRA. The DEIS leaves much of the strategy and management to a

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future Lake Management Plan, which may or may not be developed, depending on the alternative selected. We recommend that the FEIS analyze reducing noise impacts from personal watercraft in the Natural Zone, or allowing 4-stroke engines only to avoid future environmental damage. A commitment to do a Lake Management Plan should be included in the FEIS, no matter which alternative is selected; and

3) EPA recommends that the FEIS include a well-defined monitoring plan to ensure environmental quality is protected in the future. Detailed comments on these and other issues are attached for your review.

Based on the procedures EPA uses to evaluate potential environmental impacts of proposed actions and the adequacy of information presented, we have assigned a rating of EC-2, (environmental concerns-insufficient information) to the preferred alternative. The EC (environmental concerns) rating indicates that environmental impacts should be avoided in order to fully protect the environment. EPA has environmental concerns here with potential impacts to water quality and adverse noise impacts on The Natural Zone of the recreation area. A rating of 2 is given because there is insufficient information for EPA to fully assess water quality and aquatic systems. In addition, EPA believes that a wider range of alternatives could reasonably have been considered.

If you have any questions regarding these comments, you can contact me at [redacted] or my staff contacts Deborah Lebow at [redacted], or Phil Strobel at [redacted].

Sincerely,

Cynthia Cody
Director, NEPA Program
Ecosystems Protection and Remediation

Enclosures

cc: Don Ostler, Director, Division of Water Quality, UDEQ
Bill Moellmer, Environmental Scientist, UDEQ

EPA's Comments

Draft Environmental Impact Statement
Personal Watercraft Rule-Making
Glen Canyon National Recreation Area
Arizona and Utah

Water Quality

The discussion in this EIS on water quality is clear and well analyzed given the information available. However, we found no detailed long-term monitoring plan to ensure evaluation of impacts to the aquatic system. Specifically, EPA has concerns about the information given in the DEIS that "...an average 2-hour ride on a personal watercraft with a carbureted 2-cycle engine will release 3-4 gallons of fuel into the water....Such a personal watercraft operated for 7 hours produces more smog-forming emissions, including unburned hydrocarbons that are discharged into the water and then evaporate, than a passenger car driven for 100,000 miles." (See page 85, California Air Resources Board, 1999a). While the dilution factor is significant here, there is still the matter of persistent hydrocarbon constituents and whether there is sufficient information to evaluate long-term effects to aquatic system health.

This EIS should assess whether there are best management practices available for personal watercraft fueling that would reduce or eliminate fuel spills to the Lake and minimize the potential for and/or avoid exceedences of all aspects of the applicable State water quality standards. On page 83, there is a discussion of the fueling stations and launch sites, and the fact that there is evidence of a "rainbow sheen" around these sites. Utah Water Quality Standards (Standards of Quality for Waters of the State, R317-2, Utah Administrative Code) include a narrative standard at R317-2-7.2 which establishes that "it shall be unlawful, and a violation of these regulations, to discharge or otherwise place waste or other substance in such a way as will be or may become offensive such as unnatural deposits, floating debris, oil, scum, or other nuisances such as color, odor or taste..." Because Lake Powell has a Class 1c water supply designated use, there are also numeric "water & organism" human health standards listed at R317-2-14, Table 2.14.6, that apply to Lake Powell for a number of organic chemicals that may be contained in the emissions from personal watercraft. Further, the State water quality standards include an antidegradation policy at R317-2-3 that serves to maintain and protect waters whose existing quality is better than the established standards for the designated uses. We also suggest that whether the activities are fully consistent with Arizona water quality standards should be addressed.

We recognize that this is not a problem limited to personal watercraft, that this is in fact an impact from all recreational activities in the area. Nevertheless, personal watercraft contribute a portion of this impact, and a potential violation of water quality standards should be addressed. At a minimum, a commitment should be made that the Lake Management Plan will include best management practices to address this pollution source for *all* watercraft using the area.

If the visible sheen, or numeric concentrations of individual chemicals are deemed to be a violation of standards, the water quality effects of Alternatives A, B and C should be designated "major" rather than "negligible to minor." According to the DEIS, a "major" impact is present where "chemical, physical or biological water quality standards or criteria would be locally slightly and singularly exceeded on a short-term and temporary basis.

The DEIS assessment of water quality is based on water column samples taken at 0.5 and 3 meter depths. Given that most constituents from watercraft exhaust or spills will float on the water's surface, it would seem logical to collect water samples at the water's surface rather than 0.5 meters below to determine compliance with standards.

On page 169, it is stated that some hydrocarbons can adsorb onto suspended soil particles and settle out. Any monitoring plan should therefore include sediment chemistry monitoring in marinas and sediment deposition areas down-current for the constituents most likely to settle, including poly-aromatic hydrocarbons. Additionally, to understand whether current sediment conditions and aquatic health of the benthic community is altered from the historical baseline, the monitoring plan should include benthic population sampling, and bioassay of these sediments.

The FEIS should identify whether there is potential for these sediment deposition areas to be dredged. If so, it may merit implementing management practices to reduce or eliminate release of toxic constituents from personal watercraft use.

The document only lists designated uses for the tributary rivers to Lake Powell. The FEIS should list all designated uses for the Lake. In addition, page 84 of the DEIS lists the areas where sampling was done, and states that "Lake Powell is not used as a drinking water source" at any of these sites. Information from the No Discharge Zone application prepared for Lake Powell by DOI in 1999 show two drinking water intakes in the Lake, the Hite Water System Intake near Hite Marina, and the Page Water system Intake at the base of Glen Canyon Dam. Monitoring should also be done in these locations to assure that drinking water standards are met for these drinking water intakes.

The FEIS should consider including a detailed monitoring program and mitigation measures which can be adapted to address unexpected violations or impairments. Should monitoring show that Utah and/or Arizona water quality standards could be violated, the NPS could evaluate, among other things, whether an earlier phase-out date for 2-stroke carbureted engines is a reasonable course of action.

Assumptions for Analysis:

EPA believes that the supporting information for several assumptions used to determine environmental effects needs to be further clarified. One of the assumptions stated on page 161 is that even with a ban on personal watercraft, total boat-days will remain the same as they are today. This information is key to the assessment of impacts to air quality, water quality, soundscapes, wildlife and visitor experience, particularly for Alternative C. This assumption is based on the theory that, if banned, all personal watercraft will be replaced by the same number of small watercraft over time under Alternative C. The DEIS indicates that 7% of personal watercraft use is independent of other houseboat or powerboat use. Please explain the origin of this number. The FEIS should also clarify whether it is expected that overnight groups would tow in the same number of small watercraft (which presumably seat two or more people) as they currently do with personal watercraft (which generally seat one or two people).

The DEIS indicates that there are many factors outside the control of NPS that could influence future visitor use including lake levels and the economy. The only assumption analyzed in detail in the DEIS was for continued current use levels for the next ten years. Given the uncertainty inherent in estimating future recreation use, we suggest including an analysis scenario in which use increases over the ten year planning period to assess whether impacts would remain below the impairment threshold. While an increase in boat-days may or may not make a significant difference in the air and water quality of this area with the cleaner machines expected in the future, it could make a significant difference in the soundscape and wildlife issues analyzed, as well as visitor experience.

We are providing a couple of modifications to the discussion regarding future engine emissions based on EPA's 1996 regulation of marine engines (DEIS p. 162). The statement indicates that EPA's regulation will result in engines producing less noise. While 4-stroke engines typically operate at a lower pitch than 2-stroke engines, they are not necessarily quieter. The FEIS should also note that nitrogen oxide pollutant emissions, a smog precursor, are likely to increase with the conversion to more 4-stroke engines.

The FEIS should disclose the derivation of the 21% average engine load. Given what could be a major impact on the analysis, an explanation of why this is the correct assumption for personal watercraft, would be helpful. (DEIS p. 185)

In addition, a complete cumulative impact analysis should include past and present actions, in addition to the future actions analyzed to assess the impact to wildlife, water and air quality, and sound.

Alternatives Addressed

EPA's review found the range of alternatives analyzed to be somewhat limited. Alternatives A and B differ mainly in that Alternative B bans personal watercraft from larger portions of several tributaries. The DEIS states, "most of the time, the tributary rivers to Lake Powell do not have sufficient flow for personal watercraft use." (DEIS p. 203) There does not appear to be a great deal of difference between these alternatives with respect to both management and impacts. In most cases, the DEIS describes the differences between Alternatives A and B as "negligible." Even Alternative C, which eliminates personal watercraft use, provides little long-term improvement to resources or use patterns. To enhance existing alternatives and/or

add new alternatives within the range of alternatives considered in the DEIS, EPA offers the following for your consideration.

First, an alternative limiting personal watercraft use to the main channel of Lake Powell was "eliminated from further consideration" because the action would be inconsistent with the objective of the recreation area, which is to "manage the recreation area so that it provides maximal recreational enjoyment," among other objectives. At the same time, the objective for the Natural Zone is to "maintain isolated, natural processes, and consumption of renewable resources that are subject to the protection of recreation values of the area." The goal is to "return the soundscape to as near natural conditions as possible over time, while allowing visitors to access and enjoy the recreation area in a manner consistent with recreation area management goals." (DEIS, p. 197) About half the shoreline of Lake Powell is within the Natural Zone. Noise from personal watercraft is obvious in the nearshore areas of the Natural Zone. Noise modeling in the DEIS indicates that noise from vessels can be heard up to two miles into the zone.

The FEIS should consider an alternative that would achieve the GCNRA objectives of both the Natural Zone, and the Recreation and Resource Utilization Zone. The analysis of soundscape effects to the Natural Zone indicates the alternatives considered to date will not result in progress toward Natural Zone goals. The management measures in Alternative B would provide "negligable" benefit to soundscapes in the Natural Zone. Even by banning personal watercraft, as in Alternative C, the Natural Zone is left with "moderate adverse effects on the soundscape within a mile of the lakeshore." While we recognize that a Lake Management Plan would provide an opportunity to assess all recreation types, EPA encourages the NPS to address these goals through this rule making focused on personal watercraft use. As part of Alternative B, additional mitigation measures that could be analyzed to address this issue would be a speed limit on personal watercraft within a modeling-based distance from Natural Zone shorelines. Such a measure would allow continued personal watercraft access to scenic areas but could dramatically reduce the sound footprint associated with these watercraft in the Natural Zone.

Similarly, on page 61, the proposed alternative allowing only 4-stroke engines is scheduled to be reviewed as part of the future Lake Management Plan. However, the DEIS only commits to doing a Lake Management Plan for Alternatives B and C. Additionally, the explanation provided in the DEIS does not indicate why a measure that limits personal watercraft emissions could not be considered under the stated Purpose and Need for this action.

The NPS has designated Alternative B as the environmentally-preferred alternative. EPA believes that an alternative that allows only the cleaner personal watercraft engines and/or limits personal watercraft in areas where the soundscapes, wildlife or wilderness qualities in the Natural Zone are impacted, would be environmentally preferred over Alternative B in that it balances the recreational use objectives of personal watercraft with the NPS's policies requiring environmental protection. We suggest again further analysis of this in the FEIS.

Air Quality

EPA does not have significant air concerns at this time. It should be noted in the FEIS that in July 2002, EPA proposed cleaner evaporative standards for personal watercraft (see attachment). If promulgated, these standards will be relevant for future environmental studies of this issue.

The FEIS should use the same percentage for how much and which pollutants volitize in both the air and water quality impacts sections. No estimate of the percent that volatilizes is given in the water quality section. In the air quality section it is stated that up to 30% of the fuel from personal watercraft is unburned and is discharged as gaseous hydrocarbons (DEIS p. 181). The numbers should be consistent for the analysis.

Noise/Soundscape

On page 102 and as stated above under Alternatives Addressed, it is noted that much of the Lake shore is in The Natural Zone, and noise is audible there for up to two miles inland. Since the objective of The Natural Zone is to return the soundscape to as near natural condition as possible, we suggest that one of the alternatives try to eliminate this soundscape issue in the natural zone with a buffer zone. Alternative B should commit to addressing this concern in the 3-year pilot study and Lake Management Plan.

There is little discussion on the different value of the sound that personal watercraft make compared to other motorized watercraft. Personal watercraft have a distinctive pitch variation which may have different effects on humans and other species. These distinctions should be analyzed for their impacts on both the soundscape and wildlife.

Lake Management Planning

The Purpose and Need for the personal watercraft rule-making appears to have significant overlap with the proposed Lake Management Plan. The goal of this rule-making (DEIS p. 11) is "to ensure the protection of recreation area resources and values while offering recreation opportunities as provided for in the recreation area's enabling legislation, purpose, mission, and goals." Alternatives B and C include a requirement that a "Lake Management Plan" be conducted at some point in the future to "provide for the long-term protection of lake resources while allowing a range of visitor recreational opportunities." (DEIS p. 58). The Lake Management Plan would address issues related to "recreational use of the lake, visitor conflicts and safety, and potential impacts on recreation area resources from water-related recreation." (DEIS p. 58). Given that GCNRA has already determined there is a "need for a comprehensive Lake Management Plan to more thoroughly explore all water-based recreation" (DEIS p. 12), it is not clear why the Lake Management Plan is included only in Alternatives B and C. EPA suggests that the NPS commit to doing the Lake Management Plan, and include in the FEIS a more detailed description of how this rule-making differs from the plan and what the plan will cover.

GCNRA Management Zoning

The FEIS should include a map that identifies the Natural Zone and the Recreation and Resource Utilization Zone in the analysis area, and include additional detail regarding the purposes and objectives for these two zones. The impact of each alternative on whether the Natural Zone qualifies for wilderness designation, as recommended in the last Management Plan, should be described in the document.

Pollution Prevention and Mitigation under NEPA

This DEIS does not include examples of best management practices to avoid or reduce pollution to the recreation area. We encourage you to use all available practices to meet the intent of guidance issued by the Council on Environmental Quality (CEQ) integrating pollution prevention opportunities in NEPA planning, documents and decisions (Pollution Prevention and the National Environmental Policy Act, CEQ, January 1993). CEQ guidance instructs Federal agencies to include pollution prevention to the extent practicable in the proposed action and in the reasonable alternatives. In addition, Executive Order 13148, Greening the Government Through Leadership in Environmental Management, April 21, 2000, should be consulted, as well as Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition (September 14, 1998), Greening the Government Through Efficient Energy Management, June 3, 1999, and Greening the Government Through Fleet and Transportation, April 21, 2000. Pertinent provisions of these executive orders should be addressed in the FEIS and the future Lake Management Plan referenced in this rule-making. There would be additional opportunities for pollution prevention measures in the proposed Lake Management Plan.

We also refer you to the Council on Environmental Quality's (CEQ) "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations," which address the level of mitigation required for impacts that the lead Federal agency determines are not 'significant' (see CEQ, March 16, 1981). Question 19a asks, "What is the scope of mitigation measures that must be discussed?" CEQ states,

> "The mitigation measures discussed in an EIS must cover the range of impacts of the proposal....Mitigation measures must be considered even for impacts that by themselves would not be considered 'significant.' Once the proposal itself is considered as a whole to have significant effects, all of its specific effects on the environment (whether or not "significant") must be considered, and mitigation measures must be developed where it is feasible to do so."

Answer 19b states,

> "All relevant, reasonable mitigation measures that could improve the project are to be identified....Because the EIS is the most comprehensive environmental document, it is an

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ideal vehicle in which to lay out not only the full range of environmental impacts but also the full spectrum of appropriate mitigation."

Consistent with CEQ's instructions to Federal agencies, the FEIS should identify mitigation capable of improving this project or reducing environmental impacts, including impacts which are not viewed as significant by the National Park Service.

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF PARKS AND RECREATION

Michael O. Leavitt
Governor
Kathleen Clarke
Executive Director
Courtland Nelson
Division Director

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RECEIVED
GLEN CANYON NRA
2002 NOV 29 PM 1 55

November 21, 2002

Kitty L. Roberts, Superintendent
Glen Canyon National Recreation Area
P.O. Box 1507
Page, AZ 86040

Dear Superintendent Roberts:

Thank you for the opportunity to review and comment on the Draft Environmental Impact Statement for Personal Watercraft Rule-Making. We support Alternative B as listed in the study. We also strongly support the continued use of personal watercraft (PWC) on Lake Powell and that they be treated fairly, equitably and consistently with other motorboats using the lake.

We are excited for the possibilities of a lake management plan and would like to be involved in the formulation of the plan.

In reviewing the Draft EIS we have noted the following:

- Throughout the document there were many innuendos that PWCs may cause a problem of one kind or another, yet the findings showed PWCs not to be an impact, but lack of an impact was not mentioned in the summary.

- In the socioeconomic impact section of the study the areas affected if PWCs were excluded from Lake Powell seem very narrow and limited. The comments we are hearing from PWC sales and rental businesses in the Salt Lake area is if PWCs are excluded from Lake Powell it will greatly impact their businesses. Other local-to-Lake Powell businesses who will feel the impact of a closure will be restaurants, hotels, motels, gas stations, etc. We want you to be aware of this issue but we do not want to delay returning PWCs to Lake Powell by requiring this issue to be studied further.

As we have been able to show, educating PWC operators is really the key in solving many of the issues concerning PWCs. We are proud of Utah's track record in reducing PWC accidents and user conflicts.

Because of the socioeconomic impact to the State of Utah we are willing to help in whatever capacity we can to have Glen Canyon National Recreation Area open to PWCs prior to Easter Weekend in 2003.

Sincerely,

Courtland Nelson
Director

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page 1 of 3

United States Department of the Interior
FISH AND WILDLIFE SERVICE
UTAH FIELD OFFICE
2369 WEST ORTON CIRCLE, SUITE 50
WEST VALLEY CITY, UTAH 84119

In Reply Refer To
FWS/R6
ES/UT

November 14, 2002

Memorandum

To: Superintendent, National Park Service, Glen Canyon National Recreation Area Box 1507, Page Arizona 86040

From: Utah Field Supervisor, Ecological Services, U.S. Fish and Wildlife Service, West Valley City, Utah

Subject: USFWS Concurrence with the NPS Biological Assessment for the Glen Canyon NRA PWC DEIS

We have reviewed the subject Draft Environmental Impact Statement (DEIS) describing three alternatives for the management of personal watercraft use in the Glen Canyon National Recreation Area. Based on your memo of October 2, 2002, and the information provided within the DEIS, we concur that any of the three alternatives are "not likely to adversely affect" threatened or endangered species or critical habitat. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

Only a Federal agency can enter into formal Endangered Species Act section 7 consultation with the Service. A Federal agency may designate a non-Federal representative to conduct informal consultation or prepare a biological assessment by giving written notice to the Service of such a designation. The ultimate responsibility for compliance with ESA section 7, however, remains with the Federal agency.

We appreciate your interest in conserving endangered species and migratory birds. If we can be of further assistance, please contact Betsy Herrmann, Wildlife Biologist, at [redacted]

cc: Steve Spangle, Field Supervisor, Fish and Wildlife Service, Northern Arizona Field Office, 320 North Beaver Street, Flagstaff, Arizona 86001

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United States Department of the Interior
FISH AND WILDLIFE SERVICE
UTAH FIELD OFFICE
2369 WEST ORTON CIRCLE, SUITE 50
WEST VALLEY CITY, UTAH 84119

In Reply Refer To
FWS/R6
ES/UT

November 15, 2002

Memorandum

To: Superintendent, Glen Canyon National Recreation Area, Box 1507, Page, Arizona 86040

From: Utah Field Supervisor, U.S. Fish and Wildlife Service, Ecological Services, West Valley City, Utah

Subject: Glen Canyon NRA Personal Watercraft DEIS

We have reviewed the subject Draft Environmental Impact Statement (DEIS) describing three alternatives for the management of personal watercraft (PWC) use in the Glen Canyon National Recreation Area. The Fish and Wildlife Service (Service) supports the preferred alternative, Alternative B, which would allow for continued use of PWC with additional management restrictions. We are providing the following comments for your consideration.

- The model used to calculate allowable loadings (Appendix F of DEIS) uses the most conservative water quality standards to calculate toxicity thresholds, with the exception of benzene. We recommend that the Utah water quality standard for Class 3B waters (warm water fisheries), 71 ug/L for benzene, be used in the model instead of the 130 ug/L ecotoxicological benchmark value (Appendix F, Table F.1). Because of the many assumptions of the model, there is a need to be conservative with each of these benchmarks.

- A second comment regarding the model is that it should focus on the differential impacts to the side canyons from the uses anticipated under Alternatives A and B. Given the conditions in the main channel (open stretches that often develop large waves that are unsuitable for PWC use), it could be expected that PWC use will be concentrated in the river channel arms. The impacts to the main channel of Lake Powell should be essentially the same regardless of which of the two action alternatives are chosen. However, there is a substantial difference in use of the river channel arms allowed under Alternatives A and B, and impacts will depend on the length of the arms that are open to PWC use. If data are available to measure this, the extent of PWC use in the river channel arms should be compared to the lake main channel, and these data used to develop use rates and emissions loadings. These loadings should then be compared to the volume of water available in those arms under the two action alternatives. Fish in tributary areas could be significantly impacted PWC usage in these side channels, and it is important that every effort is made to correctly estimate potential effects.

- Polynuclear aromatic hydrocarbons (PAH) are primary contaminants of concern for aquatic ecosystems exposed to hydrocarbon emissions. Because of the level of motor vehicle use on Lake Powell, and the possible presence of other PAH sources on the San Juan River arm, the NPS and FWS cooperated on a preliminary study of PAH uptake in fish in the main channel, marinas, and San Juan arm. This study, conducted between 1991 and 1994, evaluated PAH concentrations detected in bile from fish collected at these three locations on the lake. Initial sample results had been available to the NPS, and this letter presents a summary of the final results from that study.

  The reasons for including the data are twofold. First, PAH metabolites in bile are a reliable and sensitive indicator of recent exposure to these constituents in the foodchain. Assuming that the origin of the PAHs can be traced to the use of combustion engines in the environment in question, PAH exposure in fish can then be linked to the use of these engines. Secondly, this data can serve as a baseline for future monitoring that should be conducted as part of the resource management plan adopted for Lake Powell following the choice of alternatives under the EIS.

  With proper study design, we believe that monitoring for this endpoint can provide a cost-effective, direct way of evaluating exposure and potential adverse impacts to aquatic wildlife species and other trust resources within the Lake Powell ecosystem. Please refer to the attached document for a more detailed explanation of these data and the methods used to obtain them.

- The tributaries to Lake Powell are important habitats for refugia native fish populations. Allowing PWC in these inlets would increase the possibility of water contamination that could be harmful to fish. We recommend that PWC be restricted from areas designated as critical habitat for endangered fish.

Specific text-related comments:

- Pg 87. Regarding discussion of the bioaccumulative properties of benzo(a)pyrene: "Oysters and bluegills are susceptible to buildup, but mudsuckers and sculpins show no tendency toward accumulation."

  First, a statement like this should have a reference, because it implies the results of a study. Secondly, the discussion does not give the reader enough information to evaluate whether the design or results of the study are applicable to Lake Powell and its biota. Are striped bass more similar to bluegills or sculpins? Are catfish more similar to oysters or mudsuckers? Does this imply that benzo(a)pyrene is more or less likely to build up in the Lake Powell ecosystem? We recommend adding citation, and developing discussion if this statement or line of reasoning is retained.

Form Letters

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From: Jim Cook [redacted]
Sent: Friday, November 15, 2002 10:55 PM
To: GLCA@den.nps.gov
Subject: PWC USE ON LAKE POWELL

Dear Sirs,

I have read the Draft Environmental Statement (DEIS) concerning personal water craft (PWC) use at Lake Powell. Below is the summary of my interpretation of the results of the DEIS. Thank you for allowing me, as a US citizen, to comment to you on my thoughts of the results of the study.

I have outlined and addressed each issue, just below.

ISSUE: Water Quality
The DEIS thus found no impact on water quality under the worst scenario of current use levels. In addition, any impacts are that may exist will dwindle each subsequent year as the fleet of PWC become more fuel-efficient and less polluting. It is clear from the DIES that no impetus or justification for restricting PWC use can be found related to the issue of water quality.

ISSUE: Air Quality
The same comments as above can be made in regard to air quality. It is clear from the DIES that no impetus or justification for restricting PWC use can be found related to the issue of air quality.

ISSUE: Soundscape
The claim is made that many recreationists who do not use PWC?s find the noise from these vessels to be ?annoying?. It should be noted that discriminatory special interest groups have taught non-motorized recreationists that any noise from motorized recreation is unacceptable. The sound standard at the Glen Canyon National Recreation Area is 82 decibels at 82 feet at full acceleration, a standard that is met by every unmodified PWC. If particular modified PWC?s exceed this limit, then they should be cited and/or removed from the waters of Lake Powell. This standard can, and should be met under Alternative A. It is clear from the DIES that no impetus or justification for restricting PWC use can be found related to the issue of 'soundscape'.

ISSUE: Wildlife and Wildlife Habitat
The DEIS tell us, on page 17: ?Few studies have examined personal watercraft effects on wildlife?. Also: ?However, the extent, duration, and magnitude of biological impacts beceuse of personal watercraft operations versus other motorboats remain unknown?. And on Page 120: ?Under current condition there are no documented reports of known conflicts of federally endangered fish or other species with watercraft or personal watercraft users.? And on Page 232: ?Conclusion. Alternative A would not adversely affect any ecological, biological, or physical processes associated with endangered fish critical habitats.? It is clear from the DIES that no impetus or justification for restricting PWC use can be found related to the issue of wildlife and wildlife habitat.

ISSUE: Shoreline Vegetation
No evidence is presented that PWC use harms shoreline vegetation. The EIS speculates that PWC?s ?may crush or uproot grasses or other submerged aquatic vegetation that occurs in shallow water? (pg ix). This speculation is totally specious and misleading. The dominate shoreline vegetation species is the alien

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Tamarisk, which, since its introduction to our shores nearly 100 year ago, has succeeded in devastating native vegetation colonies and now dominates and degrades the beaches of the entire Colorado river system. If PWC use could in some way negatively impact the Tamarisk, it would be beneficial to all. It is clear from the DIES that no impetus or justification for restricting PWC use can be found related to the issue of shoreline vegetation.

ISSUE: Visitor Conflict and Safety
Of great importance and significance are the data presented in Table 23 (pg 138) describing Lake Powell specific accident statistics. It concludes that PWC?s are involved in 14% of all accidents. This is a remarkably low rate! As the DEIS admits on page 139: ?Personal watercraft represented about 14 percent of all accidents, or just over half of the number that would be expected from their level of use (26 percent of all boat days). In other words, PWC accidents occur at only one-half the expected rate! In addition, the DIES states: ?Personal watercraft were involved in only 5% of the property damage accidents?.

With respect to conflict, Table 20 on page 133 presents data relating to ?perception of conflict by users of personal watercraft and other watercraft?. These data show only a slight elevation of ?perception of conflict? in ?other watercraft operators? compared to ?PWC operators?. This is to be expected since some members of any group will always be opposed to the activities of other groups, in the absence of any objective basis. Quantitatively, the elevation is insignificant.

It is clear from the DIES that no impetus or justification for restricting PWC use can be found related to the issue of visitor conflict or safety.

Problems with Alternative B:
Alternative B includes the adoption of the Appendix C protocol that, after a three year further study period, sets the stage for new, unspecified and perhaps draconian PWC restrictions.

It would deny operators of personal watercraft access to the important areas of the full pool shoreline of Lake Powell. The Park Service provides justification for Alternative B on page 69 of the DEIS: ?However, Alternative A would not ensure aesthetically pleasing surroundings because it would allow personal watercraft users in areas frequented by recreationists engaged in more reflective outdoor activities?. This statement well illustrates the NPS?s unrelenting bias towards its muscle- powered users and discrimination towards of all others. The DEIS ignores the fact that muscle-powered users have the vast bulk of the Colorado river system plus the entire Grand Canyon available for their exclusive use. The same comments apply to the affected sections of the Escalante, Dirty Devil, and San Juan rivers.

The fact that these restrictions outlined in Alternative B would apply only to PWC?s and not to other power craft makes them arbitrary and capricious and utterly lacking in any sense whatsoever.

The restriction to wakeless speed for PWC?s, but not for other power craft in some of these areas also defies logic. PWC wakes are negligible compared to those of the larger boats whose operations would be allowed to continue.

My Conclusion:

GLCA-00299
page 3 of 3

There is nothing in the DEIS that indicates PWC?s are the source of any substantial problems in any of the areas studied. Quite to the contrary, in some areas their impacts are significantly under represented compared to other watercraft. Thus there can be no question that Alternative A is the only rational choice. The selection of Alternative B would be arbitrary and capricious. Alternative C, a total ban, is so extreme as to be beyond any serious consideration.

There are already rules and regulations in place that will take care of any problems with the improper use of PWCs on Lake Powell, without issuing a ban on a legal and responsible family activity.

Once again, I thank you for this chance to exercise my right, and my duty, by making this comment on the use of personal watercraft on Lake Powell.

Sincerely,

Jim Cook
Smackover, AR

From: Roger Fasulkey [redacted]
Sent: Tuesday, October 15, 2002 4:13 PM
To: Superintendent Kitty Roberts
Subject: Glen Canyon PWC DEIS

GLCA-00013
page 1 of 2

Roger Fasulkey
[redacted]

October 15, 2002

Superintendent Kitty Roberts
P.O. Box 1507
Page, AZ 86040

Dear Superintendent Roberts:

I support Alternative B as presented in the Draft Environmental Impact Statement (?DEIS?) for Personal Watercraft Rule-Making in the Glen Canyon National Recreation Area. Personal watercraft (?PWC?) provide appropriate access to Lake Powell, and I strongly support continued PWC access with reasonable restrictions only as necessary to ensure acceptable levels of resource protection and public enjoyment of this public treasure.

Lake Powell provides unique opportunities for water-based recreation, including PWC use. Lake Powell is an important recreational destination visited by many families and individuals seeking to share time in a spectacular outdoor setting. Local communities derive significant socioeconomic gain through these visits, much of which is directly or indirectly attributable to PWC riding opportunities at Lake Powell.

The DEIS demonstrates that PWC have negligible impacts on the Lake?s physical resources. Monitoring demonstrates Lake Powell water and air quality levels well within the strictest applicable standards. Similarly, there are negligible impacts from PWC (or any motorized craft) on the area?s wildlife, vegetation, and cultural resources. Use of carbureted 2 cycle PWC will greatly decrease under regulations already in place, and the existing minimal impacts will be substantially decreased as industry and the public transition to cleaner and quieter technology. The DEIS correctly indicates that a PWC ban would not meaningfully further any physical resource conservation objective.

There will always be a few individuals dissatisfied with any recreational experience. The agency should not be distracted by the hidden agenda of this disgruntled minority. The DEIS demonstrates the vast majority of visitors have highly rewarding experiences at Lake Powell. ?Social conflict? is effectively non-existent at Lake Powell and we urge you to reject efforts by anti-access special interests to ?manufacture? conflict in this process.

Alternative B strikes an appropriate balance. I am willing to accept the reasonable restrictions on PWC access contained in Alternative B. Restrictions on PWC access beyond those suggested in Alternative B would unjustifiably eliminate positive family-oriented recreation with no offsetting resource or recreation benefits. I urge you to adopt

GLCA-00013
page 2 of 2

Alternative B as described in the DEIS and allow meaningful PWC access to continue at Lake Powell.

Please, Don't loose site of what Lake Powell was made for, One year it's drain the lake and then the next is to ban public use... We can't keep allowing speical interest groups to dictate our lives, It's time for people to enjoy all the hard things that we all have worked for!!! I read the Blue waters's web page, I was shocked at the mis-information on that site. A typical slanted page to fit a small groups needs. They shoud get the facts.. before running at the mouth. Plan B will work for all... even better Palm A... Come on Kitty show some courage...!!!!

Sincerely,

Roger Fasulkey

John Fields
[redacted]

GLCA-00243
page 1 of 1

Friday, September 19, 2002

Glen Canyon National Recreation Area
PWC DEIS
P.O. Box 1507
Page, Arizona 86040

Dear Sir or Madam:

As a 15+ year visitor to the Glen Canyon National Recreation Area, specifically Lake Powell I strongly urge you to adopt the "Alternative A" management plan which would allow continued use of Personal Watercraft in Lake Powell except for a few relatively lightly traveled and potentially sensitive areas.

As a less preferable alternative I would support Alternative B, which is preferred by the management of GCNRA. I have reviewed the DEIS and supporting materials and find that the impacts of PWC are negligible and due to improved emission and noise regulations believe that the impacts of PWC will decrease even though their use will remain the same.

Personally, I plan to purchase the new Sea Doo GTX 4-Tec PWC in the future. This craft is much quieter and environmentally friendly than my previous PWC craft. I know that this trend will continue with other PWC consumers and this will have a beneficial effect on Lake Powell.

Finally, as renter of houseboats at Lake Powell I disagree with your conclusions regarding Alternative C that eventually everything will be all right socio-economically speaking. I believe there will be significant and lasting Short and Long Term effects if PWC are banned at Lake Powell.

In any case - Please register my strong disagreement with Alternative –C the no- Action – ban on PWC alternative. This will serve the Blue Water network and their cohorts in the Sierra Club to cut usage at Lake Powell thus reducing its visibility and allowing them to achieve their final goal of Draining Lake Powell. This is in direct contradiction to Public Law 92-593, which established Glen Canyon National Recreation Area in 1972, and its general management plan NPS 1978a.

In summary please don't allow so called "environmentalist groups" many of who's members never have and never will visit GCNRA to take the RECREATION out of Glen Canyon National RECREATION Area, contrary to the charter and public laws that created and enabled GCNRA to exist in the first place.

Sincerely,

John Fields

GLCA-00322
page 1 of 1

REQUEST FOR COPY OF DRAFT PERSONAL WATERCRAFT EIS

AND

COMMENTS ON PERSONAL WATERCRAFT EIS

TO: Superintendent of Glen Canyon National Recreation Area

I support continued access to Glen Canyon National Recreation Area by Personal Water Crafts and the people who use them. This is a historical and traditional use dating back to the invention of PWC's in the late 1970's

As a supporter of responsible personal watercraft use I believe that decisions regarding the use of PWC's should be based on objective and unbiased scientific studies.

It is troubling to me that PWC's alone are singled out for possible restriction in this EIS. Much larger boats, including many houseboats also use the same type of engine. There is no rational basis for banning small boats with 2-stroke engines while ignoring large boats with 2-stroke engines

PWC's have always complied with EPA standards and current PWC models already meet EPA's 2006 marine engine standards.

PWC's have always complied with every state and federal sound regulation. Newer models are becoming quieter and cleaner each year.

PWC's users now comprise a large portion of your constituency. The National Park Service has a duty to accommodate and manage, not ban.

I request that you implement the restoration of full historic and traditional PWC use upon the waters of the Glen Canyon National Recreation area.

Thank you,

Signature Jacqueline P Green
Printed Name Jacqueline P Green
Street Address [redacted]
City, State, Zip Code [redacted]
E-Mail Address

GLCA-01316
page 1 of 1

From: DERRELL HAWKINS [redacted]
Sent: Wednesday, November 27, 2002 8:14 AM
To: Glen Canyon NRA
Subject: I Oppose PWCs - Manage Strictly!

Wednesday, November 27, 2002

Glen Canyon NRA
Superintendent
Glen Canyon National Recreation Area
PWC DEIS
P.O. Box 1507
Page, AZ 86040

Dear Superintendent ,

Thank you for the opportunity to submit comments on Glen Canyon National Recreation Area's personal watercraft (PWC or Jet Ski) environmental assessment.

I strongly oppose the use of Jet Skis in our national parks, including units classified as national recreation areas. Jet Skis are thrill craft, nothing but dirt bikes on water. They pollute the air and water, harass wildlife, and make a lot of noise, disturbing park visitors and natural sounds. They also have an abysmal safety record and have caused many injuries, including injuries to those not riding these obnoxious machines.

I urge park administrators to choose Alternative C, the "no action" alternative. This is the only alternative that will protect park resources unimpaired, as mandated under the Organic Act of 1916. However, I understand that park staff may decide to allow Jet Ski use to continue by choosing Alternative B as the preferred alternative. Though I would be greatly disappointed in this decision, I would like to take this opportunity to submit the following suggestions to modify Alternative B:

- Create more areas of the park that are off-limits to Jet Skis
- Prohibit Jet Ski operation within a quarter mile of any shoreline
- In any of the canyons of Lake Powell or tributary rivers where the shore-to-shore (or canyon wall-to-canyon-wall) distance is less than half a mile, the Park Service should prohibit Jet Ski use.

Sincerely,

DERRELL HAWKINS
[redacted]

GLCA-00318
page 1 of 1

****IMPORTANT INSTRUCTIONS****

Because the comment period for the Personal Watercraft Environmental Impact Statement and Special Rulemaking does not begin until July of 2002, MAILING THIS LETTER YOURSELF IS USELESS!! We will be mass-mailing all the letters collected from our office once the comment period begins and keep you informed. Please mail the letters you collect to:

BLUERIBBON COALITION [redacted]

Comments and Request for Copy of the Draft Personal Watercraft Environmental Impact Statement Glen Canyon NRA

Dear Superintendent:

I support continued access to Glen Canyon National Recreation area by Personal Water Craft (PWC). I believe that PWCs provide the best way to experience the magnificent natural features of Lake Powell.

As a supporter of responsible personal watercraft use I believe that the use of objective, unbiased, scientific studies on the effects of personal watercraft (PWC) are important.

The fact is, with the introduction of "new-technology" engine improvements such as catalysts, direct injection, and four-strokes, PWC manufacturers have achieved a 75 percent reduction in hydrocarbon and NOx emissions in a matter of years, as opposed to the decades it took the automobile industry to achieve the same reductions. Personal watercraft have always complied with EPA standards, and current PWC models already meet EPA's 2006 marine engine standards.

In the area of sound PWCs have always complied with every state and federal sound regulation. Thanks to industry investments in hull insulation and other technologies, today's PWC are up to 70 percent quieter than 1998 models, and manufacturers are working to bring their customers even quieter vessels in the future.

I would encourage you to use partnerships with the surrounding business communities, counties, and state governments to expand educational opportunities that inform visitors to Lake Powell regarding Park rules, user ethics, visitor safety and appreciation of the Park resources.

I also would like to request a copy of the Draft of Personal Watercraft Environmental Impact Statement so I may comment on the document.

Sincerely,

Signature Lou + Carol Jensen CAROL Jensen
Printed Name [redacted]
Street Address
City, State, Zip Code [redacted]
E-Mail Address ☐

October 11, 2002

GLCA-00221
page 1 of 1

National Park Service
Glen Canyon NRA
ATTN: Park Planning
P.O. Box 1507
Page, Arizona 86040

To Whom It May Concern;

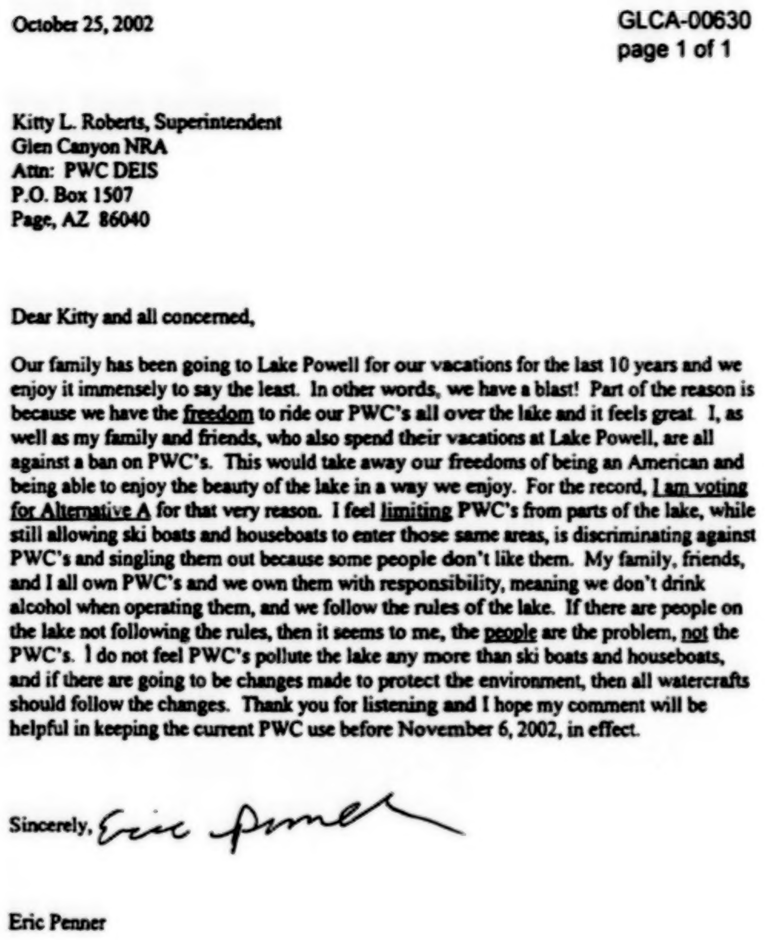
I am writing to take advantage of the opportunity to express my opinion with regard to the proposed ban on personal watercraft on Lake Powell.

I feel very strongly that this ban is not the right decision by the National Park Service, and very strongly support continuing the use of personal watercraft within the National Recreation Area.

Thank you for considering the public's opinion in this matter.

Sincerely,

Kelli Mabes



October 25, 2002

GLCA-00630
page 1 of 1

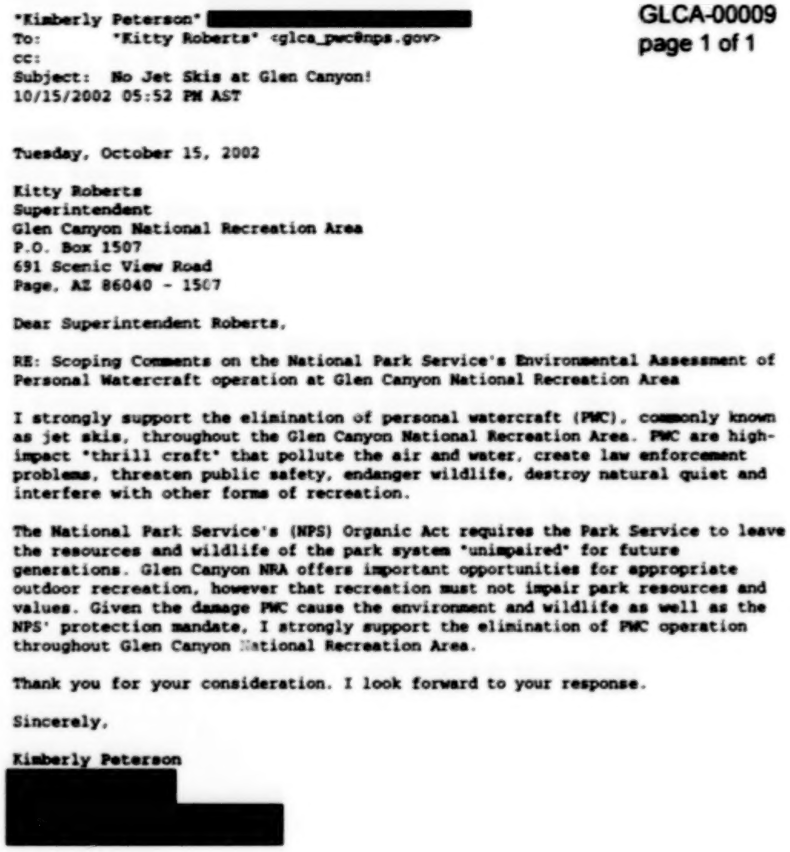
Kitty L. Roberts, Superintendent
Glen Canyon NRA
Attn: PWC DEIS
P.O. Box 1507
Page, AZ 86040

Dear Kitty and all concerned,

Our family has been going to Lake Powell for our vacations for the last 10 years and we enjoy it immensely to say the least. In other words, we have a blast! Part of the reason is because we have the freedom to ride our PWC's all over the lake and it feels great. I, as well as my family and friends, who also spend their vacations at Lake Powell, are all against a ban on PWC's. This would take away our freedoms of being an American and being able to enjoy the beauty of the lake in a way we enjoy. For the record, I am voting for Alternative A for that very reason. I feel limiting PWC's from parts of the lake, while still allowing ski boats and houseboats to enter those same areas, is discriminating against PWC's and singling them out because some people don't like them. My family, friends, and I all own PWC's and we own them with responsibility, meaning we don't drink alcohol when operating them, and we follow the rules of the lake. If there are people on the lake not following the rules, then it seems to me, the people are the problem, not the PWC's. I do not feel PWC's pollute the lake any more than ski boats and houseboats, and if there are going to be changes made to protect the environment, then all watercrafts should follow the changes. Thank you for listening and I hope my comment will be helpful in keeping the current PWC use before November 6, 2002, in effect.

Sincerely,

Eric Penner



"Kimberly Peterson" [redacted]
To: "Kitty Roberts" <glca_pwc@nps.gov>
cc:
Subject: No Jet Skis at Glen Canyon!
10/15/2002 05:52 PM AST

GLCA-00009
page 1 of 1

Tuesday, October 15, 2002

Kitty Roberts
Superintendent
Glen Canyon National Recreation Area
P.O. Box 1507
691 Scenic View Road
Page, AZ 86040 - 1507

Dear Superintendent Roberts,

RE: Scoping Comments on the National Park Service's Environmental Assessment of Personal Watercraft operation at Glen Canyon National Recreation Area

I strongly support the elimination of personal watercraft (PWC), commonly known as jet skis, throughout the Glen Canyon National Recreation Area. PWC are high-impact "thrill craft" that pollute the air and water, create law enforcement problems, threaten public safety, endanger wildlife, destroy natural quiet and interfere with other forms of recreation.

The National Park Service's (NPS) Organic Act requires the Park Service to leave the resources and wildlife of the park system "unimpaired" for future generations. Glen Canyon NRA offers important opportunities for appropriate outdoor recreation, however that recreation must not impair park resources and values. Given the damage PWC cause the environment and wildlife as well as the NPS' protection mandate, I strongly support the elimination of PWC operation throughout Glen Canyon National Recreation Area.

Thank you for your consideration. I look forward to your response.

Sincerely,

Kimberly Peterson
[redacted]

GLCA-00492
page 1 of 1

From: www@www.[redacted]
Sent: Wednesday, October 30, 2002 12:45 PM
To: donna@blueyinc.com; glca@den.nps.gov; ssmith@bluewaternetwork.org
Subject: PWC DEIS

This e-mail message is a reply to a Web page using the form2mail script. The reply was generated by a web page at www.bluewaternetwork.org.

Superintendent Kitty Roberts
Glen Canyon National Recreation Area
P.O. Box 1507
Page, AZ 86040

RE: PWC DEIS

Dear Superintendent Roberts,

Personal watercraft (PWC), better known by the trade name jetskis, cause significant damage to air and water quality, visitor enjoyment, public health and safety, endangered species, natural soundscapes, and wildlife. I fully support a ban on PWC operation in Glen Canyon NRA and call upon the National Park Service (NPS) to adopt alternative C of its draft environmental impact statement (DEIS) regarding PWC activity.

Among other impacts, PWC operation diminishes other park visitors' ability to enjoy their outdoor experience. At Cape Hatteras for example, before PWC were banned, the number one source of visitor complaints was PWC operation. In some instances, PWC activity and its proven threat to personal safety pushes other forms of recreation such as swimming or bird watching off a waterbody. This is simply unfair.

Within the park system, federal law authorizes only those forms of recreation which leave the environment "unimpaired" or cause no "derogation" to park resources or wildlife. PWC clearly violate these mandates and therefore must be prohibited at Glen Canyon.

I urge the NPS to adopt Alternative C and permanently ban these thrillcraft from the entire NRA.

Thank you for your consideration. I look forward to your response.

Sincerely,

Anne Stutz
<from_organization>
[redacted]

GLCA-00002
page 1 of 1

From: Kevin Thompson [redacted]
Sent: Tuesday, October 15, 2002 11:11 PM
To: Superintendent Kitty Roberts
Subject: Support Alternative B: Continued Access for PWC at Glen Canyon

Kevin Thompson
[redacted]

October 16, 2002

Superintendent Kitty Roberts
Glen Canyon National Recreation Area
P.O. Box 1507
Page, AZ 86040

Dear Superintendent Roberts:

Dear Superintendent:

I am a responsible PWC enthusiast, writing in support of PWC access at Glen Canyon National Recreation Area (Lake Powell).

I support Alternative B, with some exceptions, in the Environmental Impact Statement. I support reasonable restrictions on PWC use, but only as are necessary to ensure acceptable levels of resource protection and public enjoyment of the lake.

I oppose the proposed "no-wake" zones for PWC only. The United States Coast Guard and the National Association of Boating Law Administrators have, in the past, opposed regulations that have imposed speed limits on only one type of boat. This type of regulation endangers PWC operators, who may be unable to avoid collisions with other, faster moving boats.

Thank you for taking my comments into consideration. I urge you to change the rule to increase water safety on Lake Powell.

Sincerely,

Kevin Thompson

☆ U.S. GOVERNMENT PRINTING OFFICE: 2003 — 591-079 / R3156 Region No. 10

As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering wise use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historic places, and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people. The department also promotes the goals of the Take Pride in America campaign by encouraging stewardship and citizen responsibility for the public lands and promoting citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

NPS D-234 (May 2003)

END

01-29-04